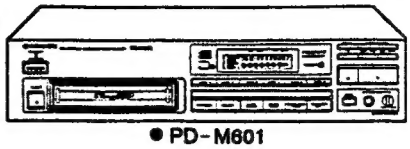
PIONEER®
The Art of Entertainment

Service Manual



● PD-M601

ORDER NO.
ARP2434

MULTI-PLAY COMPACT DISC PLAYER

PD-M601
PD-M551
PD-M501

PD-M601, PD-M551 AND PD-M501 HAVE THE FOLLOWING :

Type	Model			Power Requirement	Remarks
			PD-M501		
KU	○	○	○	AC120V only	
KUXJS	○	○	○	AC120V only	
KC	○	–	○	AC120V only	
KCXJS	○	–	○	AC120V only	
WEMXJS	○	–	○	AC220V-240V	
WBXJS	○	–	–	AC220V-240V	
RD	–	–	○	AC110-127V, 220-240V (switchable)	
WPW	–	–	○	AC220V-240V	

- **This manual is applicable to the following : PD-M601/KU, KUXJS, KC and KCXJS ; PD-M551/KU and KUXJS ; PD-M501/KU, KUXJS, KC and KCXJS.**
- **For the following : PD-M601/KUXJS, KC and KCXJS ; PD-M551/KU and KUXJS ; PD-M501/KU, KUXJS, KC and KCXJS, refer to page 39.**
- **For the other types, refer to applicable service manuals.**

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911
© PIONEER ELECTRONIC CORPORATION 1992
ISF MAR. 1992 Printed in Japan

CONTENTS

1. SAFETY INFORMATION 3
2. EXPLODED VIEWS AND PARTS LIST 5
3. PACKING 11
4. IC INFORMATION 12
5. SCHEMATIC DIAGRAM 13
6. P.C.BOARDS CONNECTION DIAGRAM 19
7. PCB PARTS LIST 25
8. ADJUSTMENTS 27
9. FOR PD-M601/KUXJS, KC, KCXJS, PD-M551/KU, KUXJS, PD-M501/KU, KUXJS, KC AND KCXJS TYPES 39
10. PANEL FACILITIES 42
11. SPECIFICATION 43

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

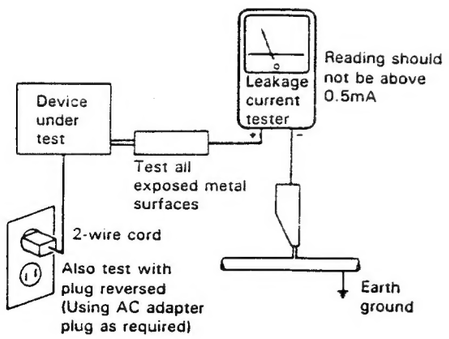
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

LASER
Kuva 1
Lasersateilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

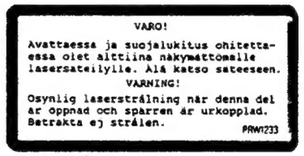
IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LASER
Picture 1
Warning sign for laser radiation

LABEL CHECK (MULTI MAGAZINE type)

WEMXJS type

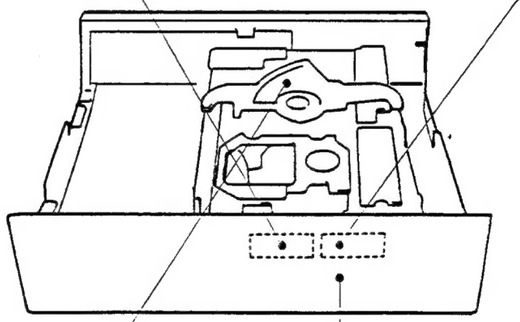

VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
PRW1233

WEMXJS type

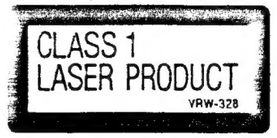
ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAFBRYDERE ER UDE AF FUNKTION.
UNDGA UDSÆTTELSE FOR STRALING.
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!
VRW1094

WBXJS type

CAUTION
INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM
PRW1018



WEMXJS and WBXJS types


CLASS 1
LASER PRODUCT
YRW-328

WEMXJS and WBXJS types

Additional Laser Caution

1. Laser Interlock Mechanism
   The ON/OFF (ON : low level,OFF : high level) status of the LPS1 (S601) and LPS2 (S602) switches for detecting the loading state is detected by the system microprocessor, and the design prevents laser diode oscillation when both switches LPS1 and LPS2 are not ON (low level) (clamped state).
   Thus, interlock will no longer function if switches LPS1 (S601) and LPS2 (S602) are deliberately shorted.
   The interlock also does not operate in the test mode ＊.
   Laser diode oscillation will continue, if pins 1 and 2 of M51593FP (IC101) on the preamplifier board loaded on pick up assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

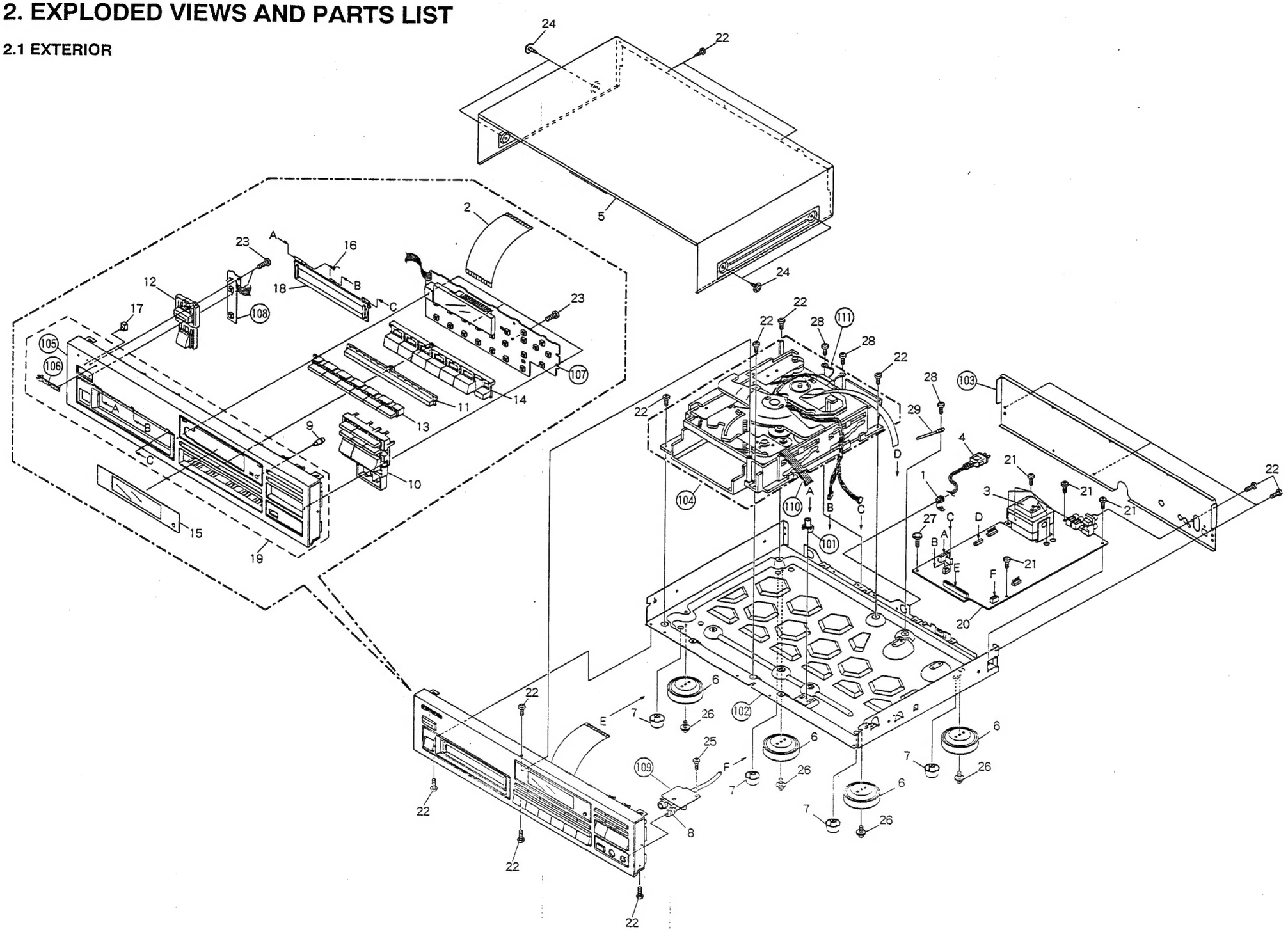
2. When the cover is opened with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

'92 M1

＊ : Refer to page 28.

2. EXPLODED VIEWS AND PARTS LIST

2.1 EXTERIOR



NOTES:

- *The parts with an encircled number are generally unavaliable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts List

Mark	No.	Description	Part No.
⚠	1	Strain relief	CM-22
	2	32P F.F.C /30V	PDD1125
⚠	3	Power transformer	PTT1235
⚠	4	Power cord with plug	RDG1010
	5	Bonnet	PYY1149
	6	Insulator (For PD-M601,M551)	PNW1912
	7	Leg assembly (For PD-M501)	PXA1201
	8	Knob (Headphone)	PAC1370
	9	Time button B	PAC1549
	10	Play button A	PAC1633
	11	Fix button	PAC1639
	12	Power button A	PAC1642
	13	Disc button	PAC1643
	14	Program button	PAC1646
	15	Display window	PAM1550
	16	Spring(Door)	PBH1022
	17	LED lens	PNW2019
	18	Door	PNW2138
	19	Function panel assembly	PEA1195
◉	20	Mother board assembly	PWM1583
	21	Screw	BBZ30P060FMC
	22	Screw	BBZ30P080FZK
	23	Screw	PPZ30P120FMC
	24	Screw	FBT40P080FZK
	25	Screw	IBZ30P060FCC
	26	Screw	IBZ30P100FCC
	27	Screw	IBZ30P180FMC
	28	Screw	PDZ30P050FMC
	29	Cord clamper	RNH-184

Mark	No.	Description	Part No.
	101	PCB mould	AMR1525
	102	Under base	PNA1751
	103	Rear base	PNA1752
	104	Multi mechanism assembly	PXA1429
	105	Function panel	PNW2139
	106	Name plate	PAM1407
	107	Function board assembly	PWZ2291
	108	Switch board assembly	PWZ2296
	109	Headphone board assembly	PWZ2300
	110	Flat cable (6P)	D20PYY0615E
	111	Earth lead unit	XDF-502

2.2 MULTI MECHANISM ASSEMBLY

Parts List

Mark	No.	Description	Part No.
	1	Motor pulley	PNW1634
	2	Gear holder	PNW1929
	3	• • • • •	
	4	Cam gear	PNW1923
	5	Belt	PEB1138
	6	Top guide	PNW1914
	7	Gear pulley	PNW1918
	8	Gear S	PNW1919
	9	Gear L	PNW1920
	10	Eject spring	PBH1107
	11	Switch lever	PNW1927
	12	Seven bar	PNW1931
	13	Sub rotary lever	PNW1933
	14	Sub rotary lever spring	PBH1111
	15	Rotary lever	PNW1932
	16	Drive plate	PNW1930
	17	Motor screw	PBA-112
	18	Holder lever spring	PBH1110
	19	Disc holder	PNW1924
	20	Cushion A	PED1001
	21	Holder lever	PNW1925
	22	Float rubber	PEB1014
	23	Float rubber	PEB1132
	24	Float screw	PBA1055
	25	Release lever	PNW1934
	26	Release spring	PBH1106
	27	Clamper cam	PNW1922
	28	Clamper holder	PNW1921
	29	Clamper spring	PBH1109
	30	Clamper	PNW1857
	31	Lock lever	PNW1917
	32	Lock spring	PBH1108
	33	Stair L	PNW1915
	34	Stair R	PNW1916
	35	Synchronize lever	PNW1926
	36	Motor assembly (LOADING, DISC SELECT)	PEA1130
	37	Screw	PMZ26P040FMC
	38	Screw	PPZ30P080FMC
	39	Screw	BBZ30P060FMC
	40	Washer	WT26D047D025
	41	Washer	WA31D054D025
	42	E ring	Z39-010
	43	Screw	IPZ30P080FMC
	44	Rubber spacer	PEB1178
	45	Rubber spacer	PEB1179
	46	Silent ring	PBK1093
	47	Washer	WA62D130D025
	48	Earth spring	PBH1132

Mark	No.	Description	Part No.
	49	Guide bar	PLA1094
	50	Disc table	PNW1067
	51	Gear 1	PNW2052
	52	Gear 2	PNW2053
	53	Gear 3	PNW2054
	54	Pinion gear	PNW2055
	55	PWB holder	PNW2057
	56	Carriage DC motor / 0.3W	PXM1027
	57	D.C. motor assembly (spindle with oil)	PEA1207
	58	Pickup assembly	PEA1179
	59	Disc table assembly	PEA1035
	60	Screw	BBZ26P060FMC
	61	Screw	BPZ20P060FMC
	62	Screw	BPZ26P100FMC
	63	Screw	JFZ17P025FZK
	64	Screw	JFZ20P040FMC
	65	Washer	WT12D032D025
	101	Motor	VXM1033
	102	Eject lever	PNB1306
	103	Upper chassis	PNB1267
	104	Servo mechanism assembly M	PXA1417
	105	Loading board assembly	PWZ2038
	106	Sub chassis	PNW2027
	107	Rubber tube	PEB1171
	108	Main chassis	PNW2026
	109	Select board assembly	PWZ2039
	110	Motor board assembly	PWZ2040
	111	Mechanism board assembly	PWX1192
	112	Earth lead unit	PDF1118
	113	Clamp magnet	PMF1014
	114	Gear stopper	PNB1303
	115	Yoke M	PNB1312
	116	AV angle	PNB1405
	117	Carriage base	PNW2058

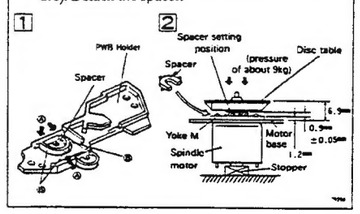
*1: Fix the motor (101) on the loading board assembly (105) so that the label attached on the motor faces the direction illustrated.

*2: Fix the motor (101) on the motor board assembly (110) so that the label attached on the motor faces the direction illustrated.

- **How to install the disc table**

1 Use nippers or other tool to cut the three sections marked Ⓐ and the three sections marked Ⓑ in figure. Then remove the spacer.

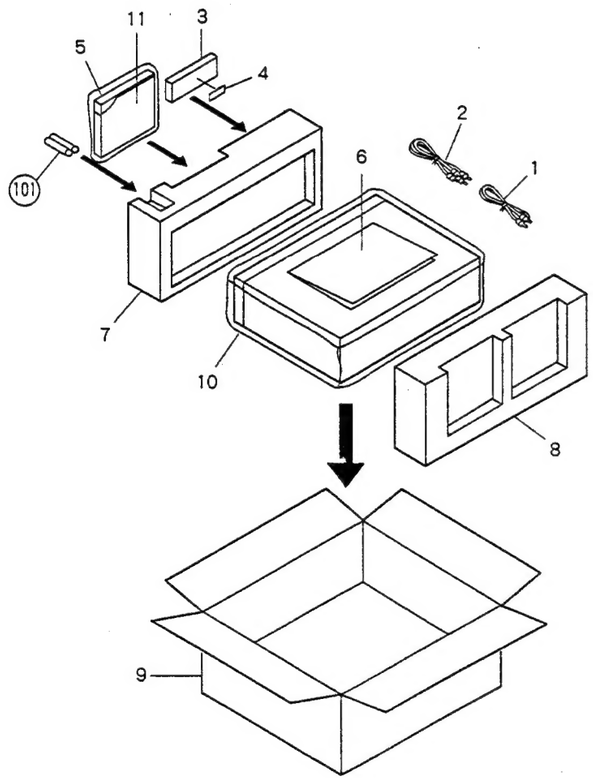
2 While supporting the spindle motor shaft with the stopper, put spacer on top of yoke M, and stick the disc table on top (takes about 9kg pressure). Detach the spacer.



3. PACKING

Parts List

Mark	No.	Description	Part No.
	1	Connection cord with mini plug	PDE-319
	2	Connection cord with pin plug	PDE1109
	3	Remote control unit	PWW1068
	4	Battery cover	PZN1010
	5	Magazine assembly	PXA1308
	6	Operating instructions (English)	PRB1166
	7	Styrol protector (F)	PHA1198
	8	Styrol protector (R)	PHA1199
	9	CD packing case	PHG1753
	10	Mirror mat sheet	Z23-007
	11	PP case	PYY1141
	101	Dry cell battery(R03, AAA)	VEM-022



4. IC INFORMATION

■ PD4396B (IC351)

System control

● Pin Function

No.	Mark	Pin Name	I/O	Function	No.	Mark	Pin Name	I/O	Function
1	RESET	$\overline{REST}$		CPU reset (L : reset)	33	P02/S0	DATA	O	Serial output of LSI control data
2	T0	DG1	O*	DIGIT output for FL drive	34	P03/S1	SQSO	I	Serial input of subcode Q data
3	T1	DG2			35	P10/INT	RMDT	I	Remote control data input
4	T2	DG3			36	P11	SCOR	I	Subcode synch. S0 + S1 input
5	T3	DG4			37	P12	$\overline{INSD}$	I	Slider inside SW input (L : INSIDE)
6	T4	DG5			38	P13	FCOK	I	Focus OK input (H : OK , L : NG)
7	T5	DG6			39	P20	L IN	O	Disc tray IN / OUT *1
8	T6	DG7			40	P21	L OUT		
9	T7	DG8			41	P22	DSDW	O	Disc selector UP/DOWN *2
10	T8	DG9			42	P23	DSUP		
11	T9	DG10			43	P30	LPS2	I	Load position SW input *3
12	PH3	$\overline{MUTE}$	O	Muting output (L : Mute , H : OFF)	44	P31	LPS1		
13	PH2	SYC3	O	Synchro output	45	P32	DCNT	I	Disc selector count pulse *4
14	PH1	—		NC (Not used.)	46	P33	DCHM		Disc selector home *4
15	PH0	STBL	O	Standby LED output (L : Goes off, H :Light),	47	P60	MZS2	I	Magazine discrimination *5 SW input
16	S11	SL	O*	SEGMENT output for FL drive	48	P61	MZS1		
17	S10	SK			49	P62	SENS	I	Multi mode input of LSI operation state
18	VLOAD			− 26V	50	P63	GFS	I	Frame sync. lock input (H : OK , L : NG)
19	VPRE			− 5V	51	P40	MUTE	O	Muting output (H : Mute , L : OFF)
20	S9	SJ	O*	SEGMENT output for FL drive	52	P41	DLAT		Latch pulse for D/A converter IC
21	S8	SI			53	P42	XLAT		Latch pulse of LSI control data
22	S7	SD			54	P43	$\overline{XRST}$		LSI reset (L : Reset , H : Release)
23	S6	SC			55	PP0	$\overline{LDON}$		Laser diode output (H : OFF , L : ON)
24	S5	SB			56	X1	X1		Main system clock oscillation
25	S4	SA			57	X2	X2		
26	VDD	VDD		+5V	58	VSS	VSS		GND
27	S3	SH	O*	SEGMENT output for FL drive	59	XT1	—		GND (Not used.)
28	S2	SG			60	XT2	—		NC (Not used.)
29	S1	SF			61	P50	KD0/TEST	I	Key scan input and TEST mode required input
30	S0	SE			62	P51	KD1		Key scan input
31	P00	SYNC1	I	Synchro input	63	P52	KD2		
32	SCK	CLOK	O	Serial clock	64	P53	KD3		

O* : Output terminals with pull-down resistor.

*1 : Loading selector

Tray	L OUT	L IN
IN	L	H
OUT	H	L
STOP	L	L

*2 : Disc selector UP / DOWN

Selector	DSDW	DSUP
UP	L	H
DOWN	H	L
STOP	L	L

*3 : Loading position SW

	LPS1	LPS2
CLAMP	L	L
LOADING	L	H
HOME	H	H
EJECT	H	L

*4 : DISC select

	DCNT	DCHM
2 – 6 DISC	L	H
HOME	L	L
During select	H	*

*5 : Magazine discrimination

	MZS1	MZS2
Magazine OUT	H	*
IN MULTI	L	H
IN SINGLE	L	L

5. SCHEMATIC DIAGRAM

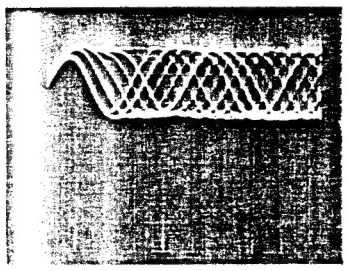
5.1 Waveforms

Note: The encircled numbers denote measuring points in the schematic diagram.

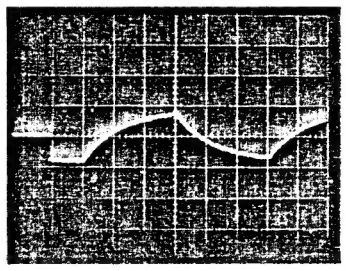
*1 50T-JUMP:After switching to the pause mode, press the manual search key.
*2 FOCUS-IN:Press the key without loading a disc.

*3 POWER ON:Plug AC cord into AC wall socket.
*4 POWER OFF:Unplug AC cord form AC wall socket.

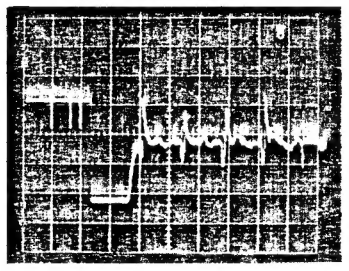
② TP1-Pin 1:PLAY MODE
(RF)
500mV/div 500nsec/div



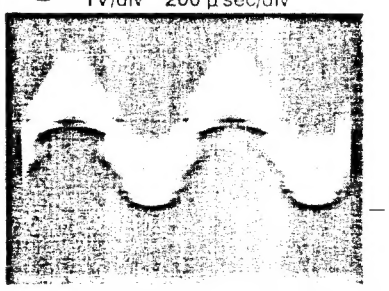
⑤ IC202-Pin 3 :FOCUS-IN (*2) MODE
(FODR)
1V/div 200msec/div



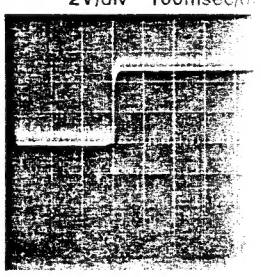
⑦ IC201-Pin 9:TRACK SEARCH MODE
(SPDR)
2V/div 50msec/div



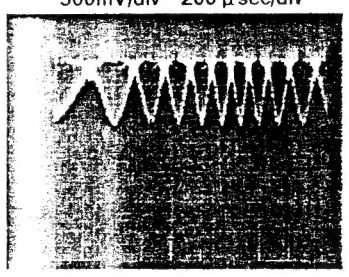
⑪ IC401-Pin 10:PLAY MODE (1kHz)
(LO) (D/A DATA OUT)
1V/div 200 μsec/div



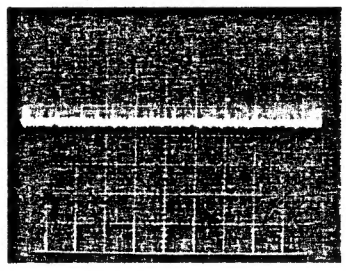
㉒ IC20-Pin 9:POWE
(RST)
2V/div 100msec/d



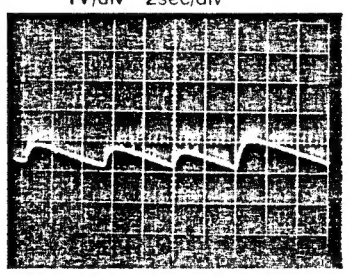
② TP1-Pin 1:TRACK SEARCH MODE
(RF)
500mV/div 200 μsec/div



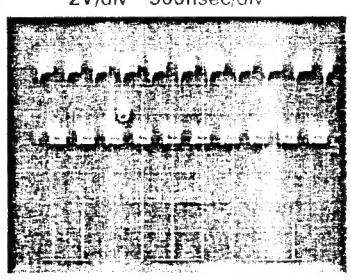
⑤ IC202-Pin 3 :PLAY MODE
(FODR)
1V/div 1msec/div



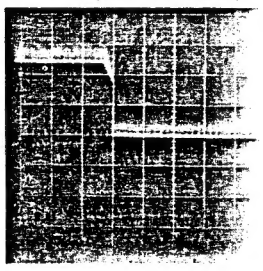
⑧ IC202-Pin 9 :PLAY MODE
(CADR)
1V/div 2sec/div



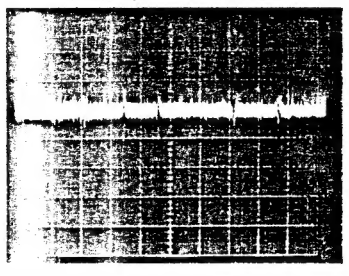
⑯ IC301-Pin 35:PLAY MODE (1kHz)
(BCLK)
2V/div 500nsec/div



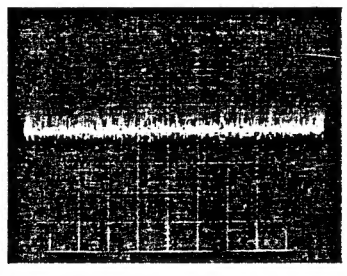
㉒ IC20-Pin 9:POWE
(RST)
2V/div 100msec/d



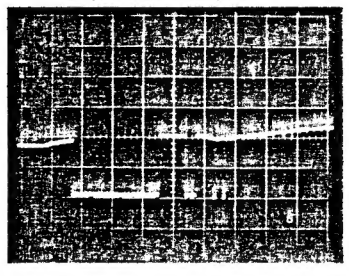
③ TP1-Pin 6:PLAY MODE
(FOER)
100mV/div 10msec/div



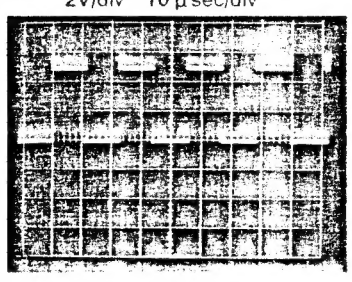
⑥ IC202-Pin 4:PLAY MODE
(TRDR)
500mV/div 1msec/div



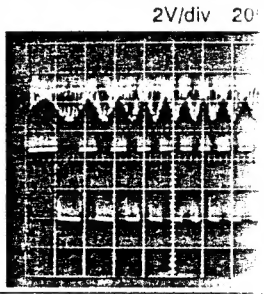
⑧ IC202-Pin 9 :TRACK SEARCH MODE
(CADR)
2V/div 200msec/div



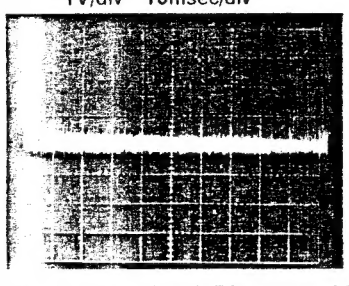
⑱ IC301-Pin 32:PLAY MODE (1kHz)
(LRCK)
2V/div 10 μsec/div



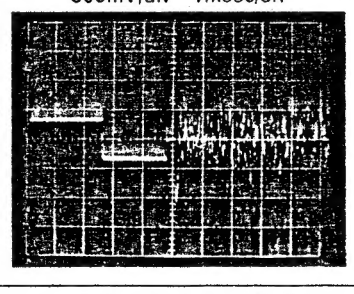
㉓ :TRACK SEAR
Upper:TP1-Pin 1 (
Lower:IC151-Pin 2
2V/div 20



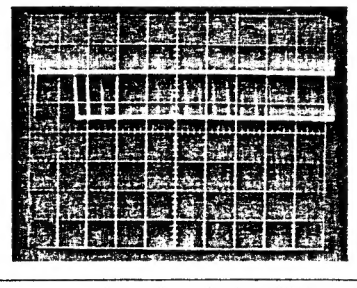
④ TP1-Pin 2:PLAY MODE
(TRER)
1V/div 10msec/div



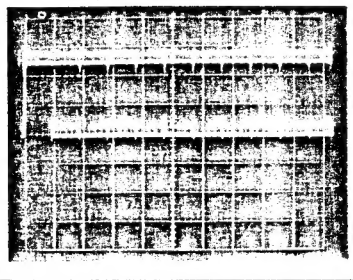
⑥ IC202-Pin 4:50T-JUMP (*1) MODE
(TRDR)
500mV/div 1msec/div



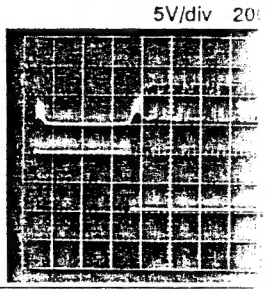
⑨ IC151-Pin 32:PLAY MODE
(EFM)
2V/div 500nsec/div



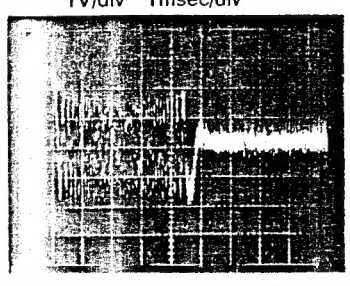
⑲ IC301-Pin 34:PLAY MODE (1kHz)
(DATA)
2V/div 500nsec/div



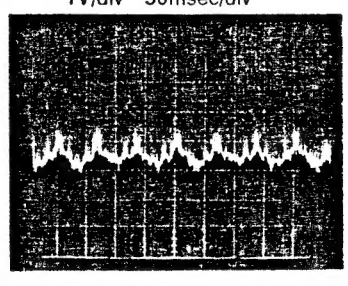
㉔ :PLAY
Upper:TP1-Pin 1 (
Lower: IC151-Pin 3
5V/div 20



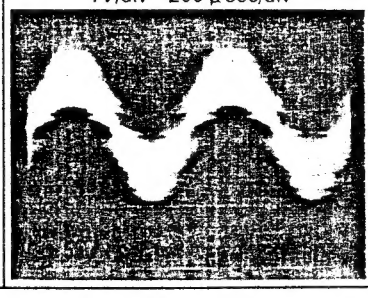
④ TP1-Pin 2:50T-JUMP (*1) MODE
(TRER)
1V/div 1msec/div



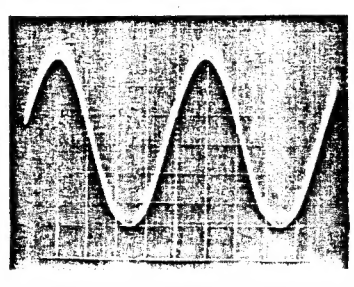
⑦ IC201-Pin 9:PLAY MODE
(SPDR)
1V/div 50msec/div



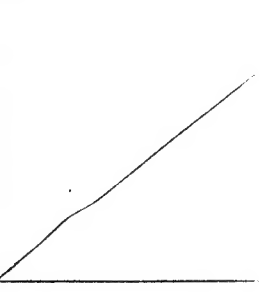
⑩ IC401-Pin 9:PLAY MODE (1kHz)
($\overline{LO}$) (D/A DATA OUT)
1V/div 200 μsec/div



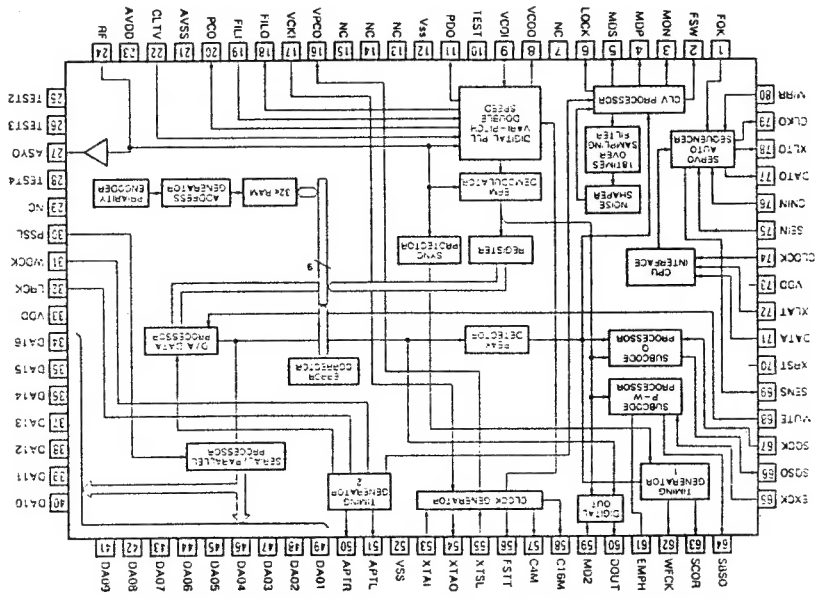
㉑ Pin-OUTPUT:PLAY MODE(1kHz)
1V/div 200 μsec/div



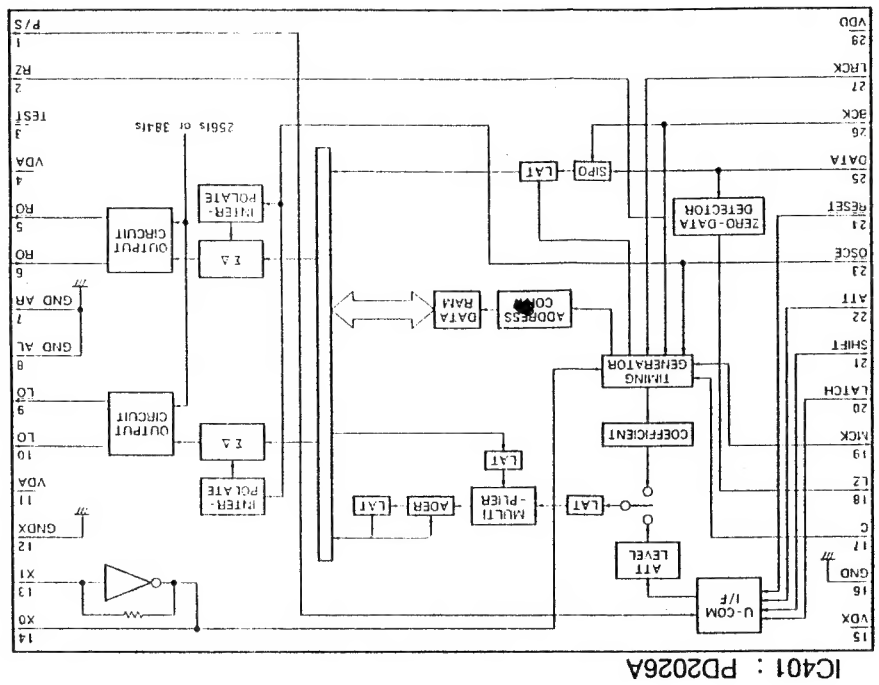
㉕



● IC BLOCK DIAGRAMS



IC301 : CXD2500AQ



IC401 : PD2026A

1. RESISTORS :
Indicated in Ω , 1/4W, 1/6W and 1/8W, ± 5% tolerance unless otherwise noted k ; k Ω , M; M Ω , (F) ; ± 1%, (G) ; ± 2%, (K) ; ± 10%, (M) ; ± 20% tolerance.

2. CAPACITORS :
Indicated in capacity (μ F) / voltage(V)unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT :
▭ ; DC voltage (V) at play state.
⇨ mA ; DC current at play state.
Value in ( ) is DC current at stop state.

4. OTHERS :
➡ ; Signal route.
◌ ; Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES : (The underlined indicates the switch position)
LOADING BOARD ASSEMBLY
S601 : LPS1
S602 : LPS2
SELECT BOARD ASSEMBLY
S603 : MZS1
S604 : MZS2
S605 : DCHM
S606 : DCNT
MECHANISM BOARD ASSEMBLY
S610 : INSIDE
FUNCTION BOARD ASSEMBLY
S701 : DISC2
S702 : DISC1
S703 : AUTO FADER
S704 : DELETE
S705 : PROGRAM
S717 : COMPU PGM EDIT
S718 : HI - LITE SCAN
S719 : DISC 3
S720 : DISC 4
S721 : ADLC
S722 : TIME FADE EDIT
S723 : DISC 5
S724 : DISC 6
S725 : ❙❙ (PAUSE)
S726 : REPEAT
S727 : ■ (STOP)
S728 : TIME
S729 : ▶ (PLAY)
S730 : RANDOM PLAY
S731 : |◀◀ ◀◀ (TRACK/MANUAL SEARCH)
S732 : ▶▶ ▶▶| (TRACK/MANUAL SEARCH)

Pi POWER ON(*3)
1 msec/div
— GND
(26)

Pi POWER OFF(*4)
1 msec/div
— GND
(27)

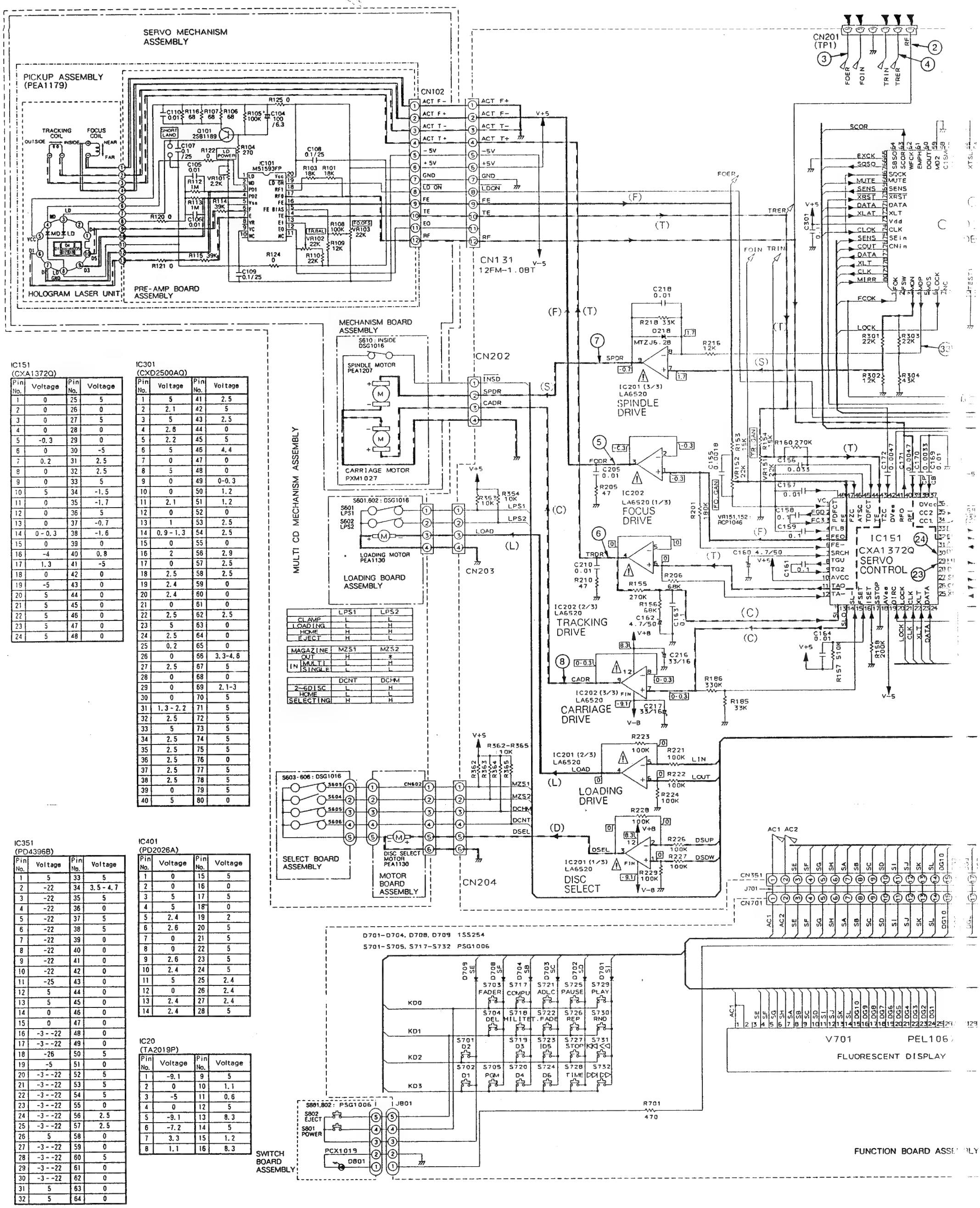
R SEARCH MODE
Tr Pin 1 (RF) 1V/div
IC 1 - Pin 29 (MIRR)
div 200 μ sec/div
— GND
— GND
(28)

PLAY MODE
Tr Pin 1 (RF) 1V/div
IC 1 - Pin 30 (DFCT)
div 200 μ sec/div
— GND
— GND

(33) IC301 - Pin 4:PLAY MODE
(MDP)
2V/div 2 μ sec/div
— GND

(53) IC301 - Pin 20:PLAY MODE
(PCO)
2V/div 10 μ sec/div
— GND

5.2 SCHEMATIC DIAGRAM



IC151 (CXA1372Q)

Pin No.	Voltage	Pin No.	Voltage
1	0	25	5
2	0	26	0
3	0	27	5
4	0	28	0
5	-0.3	29	0
6	0	30	-5
7	0.2	31	2.5
8	0	32	2.5
9	0	33	5
10	5	34	-1.5
11	0	35	-1.7
12	0	36	5
13	0	37	-0.7
14	0 - 0.3	38	-1.6
15	0	39	0
16	-4	40	0.8
17	1.3	41	-5
18	0	42	0
19	-5	43	0
20	5	44	0
21	5	45	0
22	5	46	0
23	5	47	0
24	5	48	0

IC301 (CXD2500AQ)

Pin No.	Voltage	Pin No.	Voltage
1	5	41	2.5
2	2.1	42	5
3	5	43	2.5
4	2.8	44	0
5	2.2	45	5
6	5	46	4.4
7	0	47	0
8	5	48	0
9	0	49	0-0.3
10	0	50	1.2
11	2.1	51	1.2
12	0	52	0
13	1	53	2.5
14	0.9 - 1.3	54	2.5
15	0	55	0
16	2	56	2.9
17	0	57	2.5
18	2.5	58	2.5
19	2.4	59	0
20	2.4	60	0
21	0	61	0
22	2.5	62	2.5
23	5	63	0
24	2.5	64	0
25	0.2	65	0
26	0	66	3.3-4.6
27	2.5	67	5
28	0	68	0
29	0	69	2.1-3
30	0	70	5
31	1.3 - 2.2	71	5
32	2.5	72	5
33	5	73	5
34	2.5	74	5
35	2.5	75	5
36	2.5	76	0
37	2.5	77	5
38	2.5	78	5
39	0	79	5
40	5	80	0

IC351 (PD4396B)

Pin No.	Voltage	Pin No.	Voltage
1	5	33	5
2	-22	34	3.5 - 4.7
3	-22	35	5
4	-22	36	0
5	-22	37	5
6	-22	38	5
7	-22	39	0
8	-22	40	0
9	-22	41	0
10	-22	42	0
11	-25	43	0
12	5	44	0
13	5	45	0
14	0	46	0
15	0	47	0
16	-3 - -22	48	0
17	-3 - -22	49	0
18	-26	50	5
19	-5	51	0
20	-3 - -22	52	5
21	-3 - -22	53	5
22	-3 - -22	54	5
23	-3 - -22	55	0
24	-3 - -22	56	2.5
25	-3 - -22	57	2.5
26	5	58	0
27	-3 - -22	59	0
28	-3 - -22	60	5
29	-3 - -22	61	0
30	-3 - -22	62	0
31	5	63	0
32	5	64	0

IC401 (PD2026A)

Pin No.	Voltage	Pin No.	Voltage
1	0	15	5
2	0	16	0
3	5	17	5
4	5	18	0
5	2.4	19	2
6	2.6	20	5
7	0	21	5
8	0	22	5
9	2.6	23	5
10	2.4	24	5
11	5	25	2.4
12	0	26	2.4
13	2.4	27	2.4
14	2.4	28	5

IC20 (TA2019P)

Pin No.	Voltage	Pin No.	Voltage
1	-9.1	9	5
2	0	10	1.1
3	-5	11	0.6
4	0	12	5
5	-9.1	13	8.3
6	-7.2	14	5
7	3.3	15	1.2
8	1.1	16	8.3

MOTHER BOARD ASSEMBLY
(PWM1583 : PD-M601)
(PWM1582 : PD-M551)
(PWM1579 : PD-M501)

	R445.R446	R
PD-M501 PD-M551	680 Ω	
PD-M601	270 Ω	

Q452 : ZERO DETECTING ATTENUATOR DRIVER

Q451 : ZERO DETECTING ATTENUATOR DRIVER

Q453 : ZERO ATTEN

Q405 : MUTE DRIVER

Q322 : INVERTER BUFFER

Q391 : INVERTER BUFFER

IC301 CXD2500AQ DECODER

IC401 PD2026A D/A CONVERTER

IC151 CXA1372Q SERVO CONTROL

IC351 PD4396B SYSTEM CONTROL

IC21 : +5V REGULATOR

IC20 TA2019P
IC20 : SYSTEM RESET & ±5V REGULATOR

IC405 (1/2) BA15218
IC406 (1/2) BA15218
LOW-P

PD-M501 ONLY

	D391	JP
PD-M601 PD-M551	USED	SHORT (JUMPER)
PD-M501	SHORT (JUMPER)	OPEN

V701 PEL1067
FLUORESCENT DISPLAY

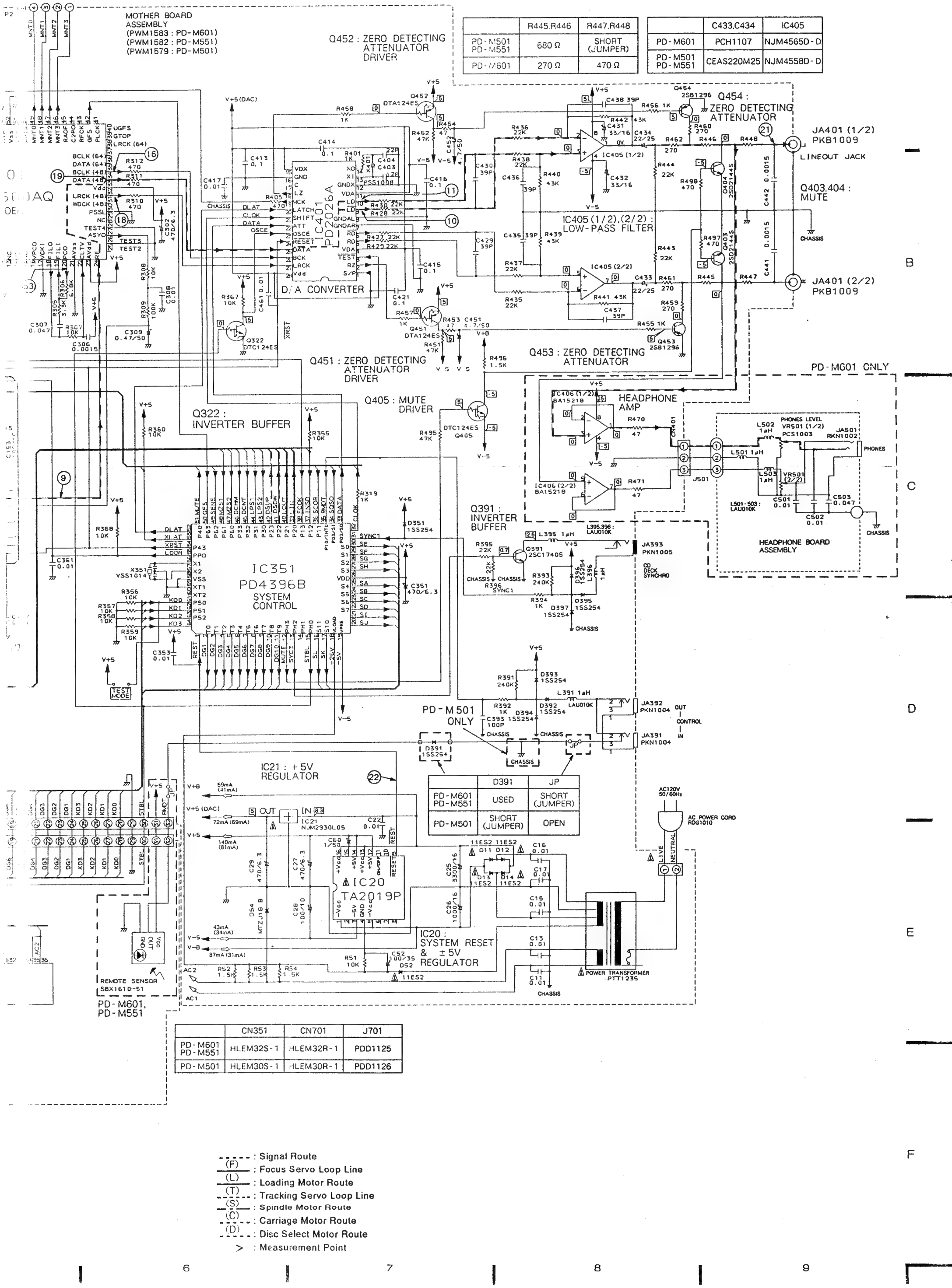
REMOTE SENSOR
S8X1610-51

PD-M601,
PD-M551

	CN351	CN701	J701
PD-M601 PD-M551	HLEM32S-1	HLEM32R-1	PDD1125
PD-M501	HLEM30S-1	HLEM30R-1	PDD1126

FUNCTION BOARD ASSEMBLY

: Signal Route
(F) : Focus Servo Loop Line
(L) : Loading Motor Route
(T) : Tracking Servo Loop Line
(S) : Spindle Motor Route
(C) : Carriage Motor Route
(D) : Disc Select Motor Route
➤ : Measurement Point



	R445,R446	R447,R448
PD-M501 PD-M551	680 Ω	SHORT (JUMPER)
PD-M601	270 Ω	470 Ω

	C433,C434	IC405
PD-M601	PCH1107	NJM4565D-D
PD-M501 PD-M551	CEAS220M25	NJM4558D-D

	D391	JP
PD-M601 PD-M551	USED	SHORT (JUMPER)
PD-M501	SHORT (JUMPER)	OPEN

	CN351	CN701	J701
PD-M601 PD-M551	HLEM32S-1	HLEM32R-1	PDD1125
PD-M501	HLEM30S-1	HLEM30R-1	PDD1126

: Signal Route
(F) : Focus Servo Loop Line
(L) : Loading Motor Route
(T) : Tracking Servo Loop Line
(S) : Spindle Motor Route
(C) : Carriage Motor Route
(D) : Disc Select Motor Route
> : Measurement Point

6. P.C.BOARDS CONNECTION DIAGRAM

SELECT BOARD ASSEMBLY

MOTHER BOARD ASSEMBLY
(PWM1583 : PD-M601)
(PWM1582 : PD-M551)
(PWM1579 : PD-M501)

PICKUP ASSEMBLY (PEA1179)

MOTOR BOARD ASSEMBLY

MECHANISM BOARD ASSEMBLY

LOADING BOARD ASSEMBLY

SWITCH BOARD ASSEMBLY

HEADPHONE BOARD ASSEMBLY

IC151 (CXA1372Q)

Pin No.	Voltage	Pin No.	Voltage
1	0	25	5
2	0	26	0
3	0	27	5
4	0	28	0
5	-0.3	29	0
6	0	30	-5
7	0.2	31	2.5
8	0	32	2.5
9	0	33	5
10	5	34	-1.5
11	0	35	-1.7
12	0	36	5
13	0	37	-0.7
14	0 - 0.3	38	-1.6
15	0	39	0
16	-2	40	0.8
17	1.3	41	-5
18	0	42	0
19	-5	43	0
20	5	44	0
21	5	45	0
22	5	46	0
23	5	47	0
24	5	48	0

IC20 (TA2019P)

Pin No.	Voltage	Pin No.	Voltage
1	-6.1	9	5
2	0	10	1.1
3	-5	11	0.5
4	0	12	5
5	-6.1	13	8.3
6	-7.2	14	5
7	3.3	15	1.2
8	1.1	16	8.3

IC401 (PD2026A)

Pin No.	Voltage	Pin No.	Voltage
1	0	15	5
2	0	16	0
3	5	17	5
4	5	18	0
5	2.4	19	2
6	2.5	20	5
7	0	21	5
8	0	22	5
9	2.5	23	5
10	2.4	24	5
11	5	25	2.4
12	0	28	2.4
13	2.4	27	2.4
14	2.4	28	5

IC351 (PD4396B)

Pin No.	Voltage	Pin No.	Volt
1	5	33	5
2	-22	34	3.5
3	-22	35	5
4	-22	36	0
5	-22	37	5
6	-22	38	5
7	-22	39	0
8	-22	40	0
9	-22	41	5
10	-22	42	0
11	-25	43	0
12	5	44	0
13	5	45	0
14	0	46	0
15	0	47	0
16	-3 - -22	48	0
17	-3 - -22	49	0
18	-26	50	3
19	-5	51	0
20	-3 - -22	52	5
21	-3 - -22	53	5
22	-3 - -22	54	5
23	-3 - -22	55	0
24	-3 - -22	56	2.
25	-3 - -22	57	2.
26	5	58	0
27	-3 - -22	59	0
28	-3 - -22	60	5
29	-3 - -22	61	0
30	-3 - -22	62	0
31	5	63	0
32	5	64	0

SEMBLY
601)
551)
501)

PD-M601 PD-M551	SHORT
PD-M501	OPEN

PD-M601 PD-M551	USED
PD-M501	JUMPER

CONTROL OUT IN | CD DECK SYNCHRO | LINE OUT

PD-M501 ONLY

CMKS-54XT

8DAC PULSEFLOW

POWER TRANSFORMER

PD-M601 ONLY

IC401 (PD2028A)

Pin No.	Voltage	Pin No.	Voltage
1	0	15	5
2	0	16	0
3	5	17	5
4	5	18	0
5	2.4	19	2
6	2.6	20	5
7	0	21	5
8	0	22	5
9	2.6	23	5
10	2.4	24	5
11	5	25	2.4
12	0	26	2.4
13	2.4	27	2.4
14	2.4	28	5

IC351 (PD4396B)

Pin No.	Voltage	Pin No.	Voltage
1	5	33	5
2	-22	34	3.5 - 4.7
3	-27	35	5
4	-22	36	0
5	-22	37	5
6	-22	38	5
7	-22	39	0
8	-22	40	0
9	-22	41	0
10	-22	42	0
11	-25	43	0
12	5	44	0
13	5	45	0
14	0	46	0
15	0	47	0
16	-3 - -22	48	0
17	-3 - -22	49	0
18	-26	50	5
19	-5	51	0
20	-3 - -22	52	5
21	-3 - -22	53	5
22	-3 - -22	54	5
23	-3 - -22	55	0
24	-3 - -22	56	2.5
25	-3 - -22	57	2.5
26	5	58	0
27	-3 - -22	59	0
28	-3 - -22	60	5
29	-3 - -22	61	0
30	-3 - -22	62	0
31	5	63	0
32	5	64	0

IC301 (CXD2500AQ)

Pin No.	Voltage	Pin No.	Voltage
1	5	41	2.5
2	2.1	42	5
3	5	43	2.5
4	2.5	44	0
5	2.2	45	5
6	5	45	4.4
7	0	47	0
8	5	48	0
9	0	49	0-0.3
10	0	50	1.2
11	2.1	51	1.2
12	0	52	0
13	1	53	2.5
14	0.9 - 1.3	54	2.5
15	0	55	0
16	2	56	2.9
17	0	57	2.5
18	2.5	58	2.5
19	2.4	59	0
20	2.4	60	0
21	0	61	0
22	2.5	62	2.5
23	5	63	0
24	2.5	64	0
25	0.2	65	0
26	0	66	3.3-4.6
27	2.5	67	5
28	0	68	0
29	0	69	2.1-3
30	0	70	5
31	1.3 - 2.2	71	5
32	2.5	72	5
33	5	73	5
34	2.5	74	5
35	2.5	75	5
36	2.5	76	0
37	2.5	77	5
38	2.5	78	5
39	0	79	5
40	5	80	0

P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
		FET			Mylar capacitor
					Styrol capacitor
		Diode			Electrolytic capacitor (Non polarized)
					Electrolytic capacitor (Noiseless)
		Zenner diode			Electrolytic capacitor (Polarized)
					Electrolytic capacitor (Polarized)
		LED			Power capacitor
		Varactor			Semi-fixed resistor
		Tact switch			Resistor array
					Resistor
		Inductor			
		Coil			Resonator
		Transformer			Thermistor
		Filter			

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

PD-M601 ONLY

HEADPHONE BOARD ASSEMBLY

JR501 PHONES

PWZ2300-

VR501 PHONES LEVEL

SWITCH BOARD ASSEMBLY

FUNCTION BOARD ASSEMBLY

CNZ81

PWZ2290-
2291-

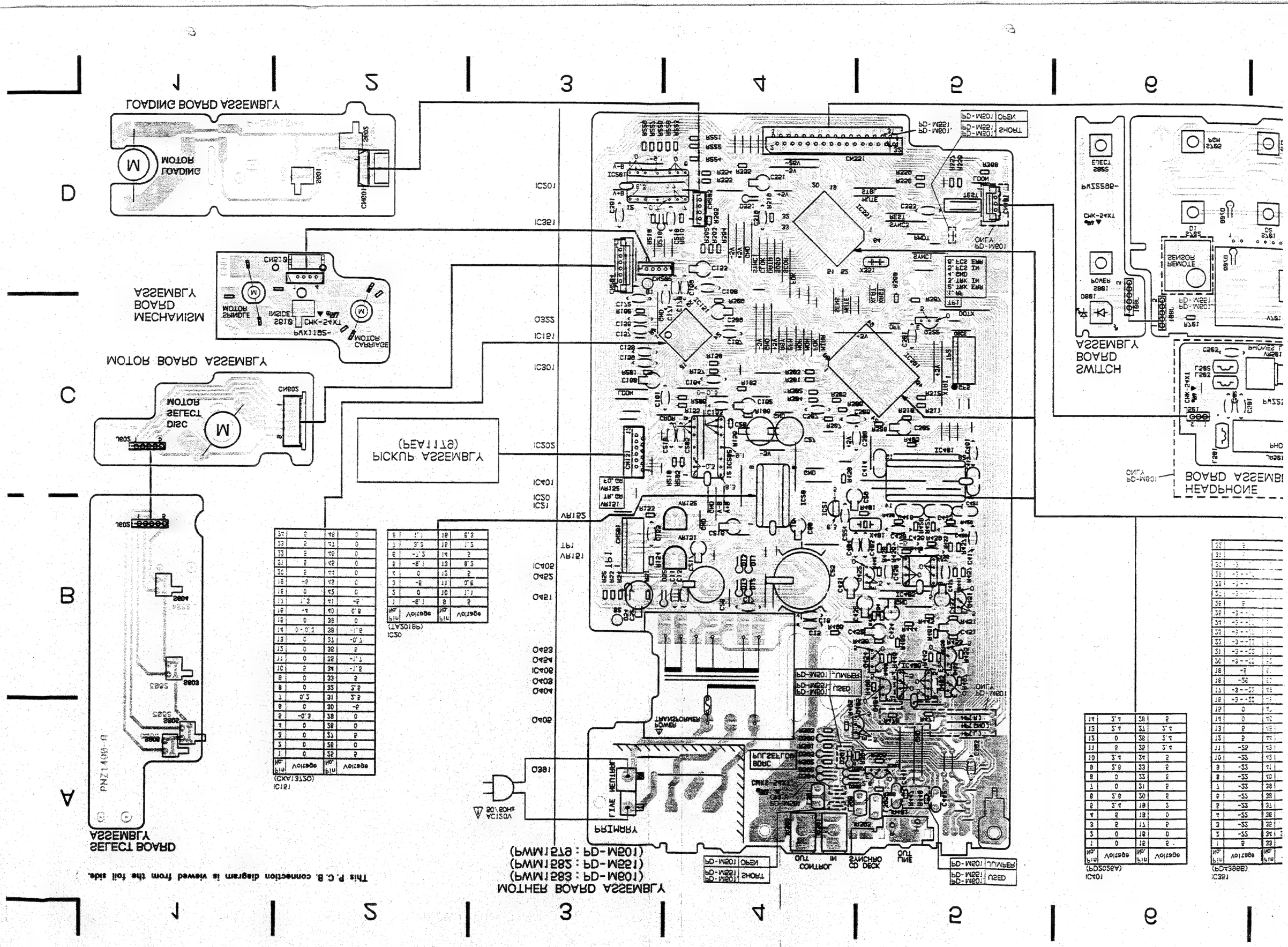
S726 REP
S730 RND
S727 STOP■
S731
S732
S728 TIME
S725 PAUSE■■
S729 PLAY►
S721 ROLC
S722 T.FADE
S723 PGM
S724 DEL
S720 FADER
S718 MILITE
S717 COMPU
S719
S722
S781 D2
S782 D1

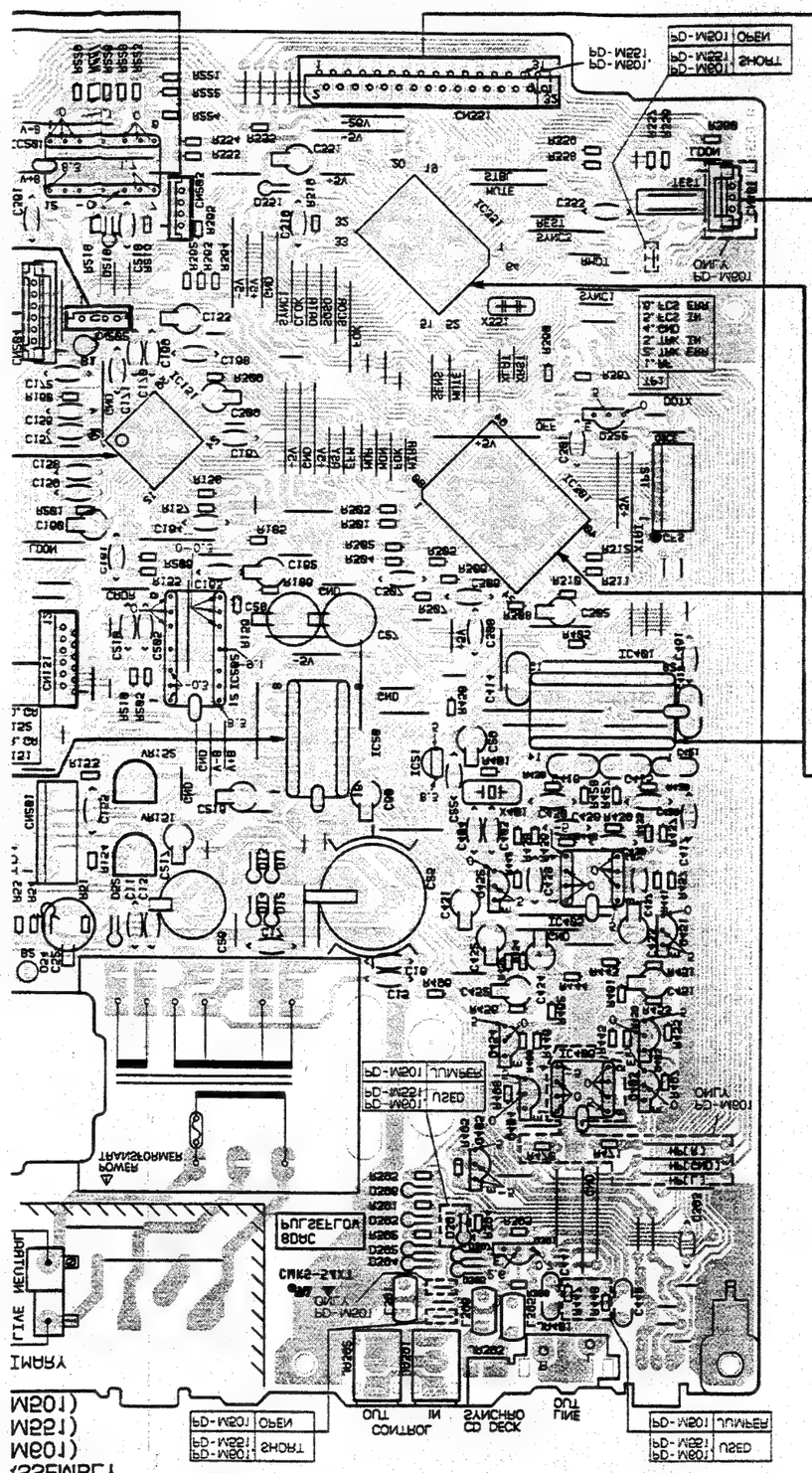
REMOTE SENSOR

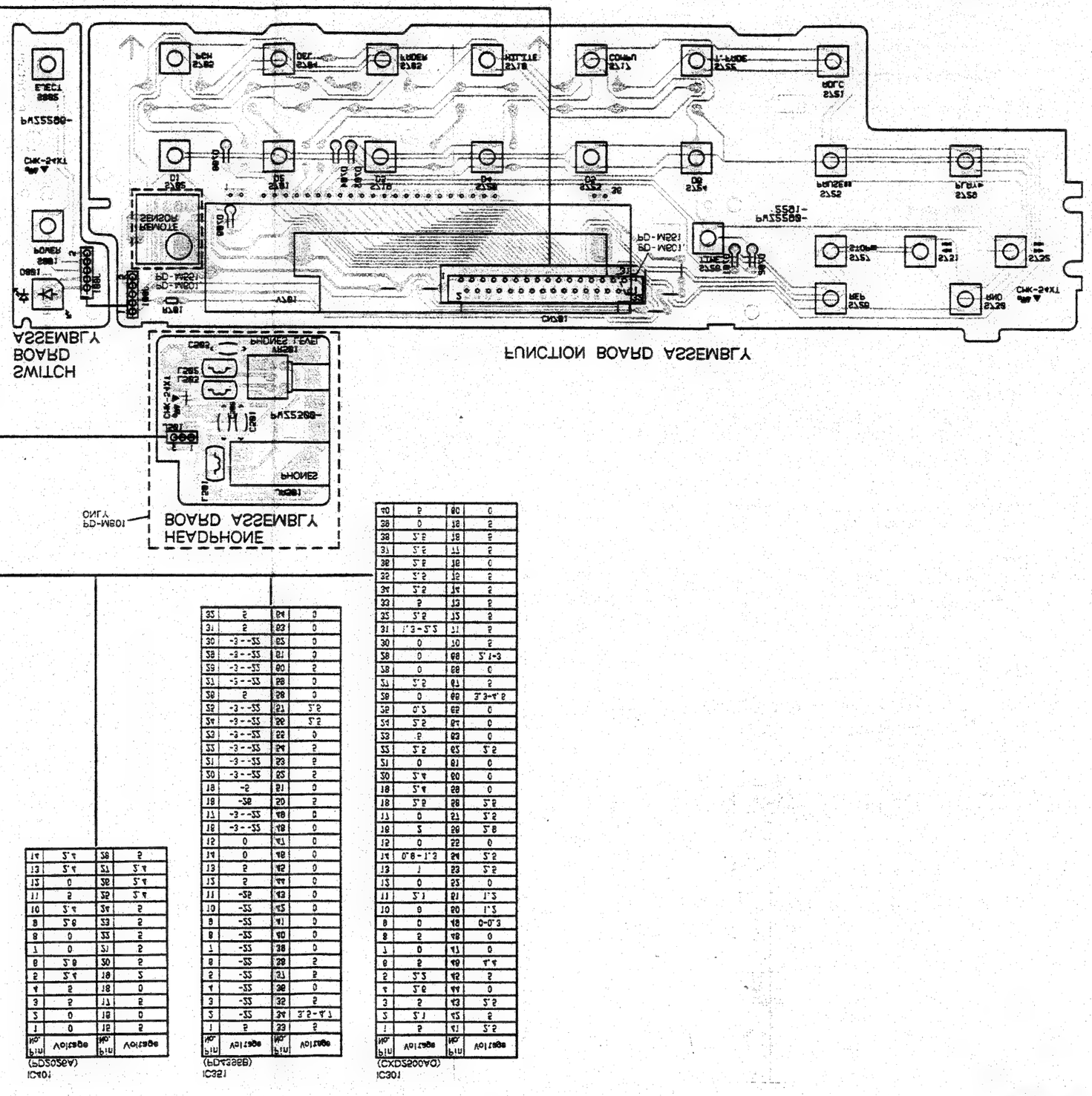
PD-M601 PD-M551

PD-M601 PD-M551	SHORT
PD-M501	OPEN

A
B
C
D


LOADING BOARD ASSEMBLY
MOTOR LOADING
CN801
CN802
MECHANISM BOARD ASSEMBLY
MOTOR SPINDLE
MOTOR CARRIAGE
CN151
CN152
CN153
CN154
CN155
CN156
CN157
CN158
CN159
CN160
CN161
CN162
CN163
CN164
CN165
CN166
CN167
CN168
CN169
CN170
CN171
CN172
CN173
CN174
CN175
CN176
CN177
CN178
CN179
CN180
CN181
CN182
CN183
CN184
CN185
CN186
CN187
CN188
CN189
CN190


ASSEMBLY
(M601)
(M551)
(M201)
FUNCTION
CONTROL
CD DECK
LINE
OUT
IN
OUT
SWITCH
POWER
TRANSFORMER
PULSE GENERATOR
8DAC
CN4-24P1
CN5-24P1
CN6-24P1
CN7-24P1
CN8-24P1
CN9-24P1
CN10-24P1
CN11-24P1
CN12-24P1
CN13-24P1
CN14-24P1
CN15-24P1
CN16-24P1
CN17-24P1
CN18-24P1
CN19-24P1
CN20-24P1
CN21-24P1
CN22-24P1
CN23-24P1
CN24-24P1
CN25-24P1
CN26-24P1
CN27-24P1
CN28-24P1
CN29-24P1
CN30-24P1
CN31-24P1
CN32-24P1
CN33-24P1
CN34-24P1
CN35-24P1
CN36-24P1
CN37-24P1
CN38-24P1
CN39-24P1
CN40-24P1
CN41-24P1
CN42-24P1
CN43-24P1
CN44-24P1
CN45-24P1
CN46-24P1
CN47-24P1
CN48-24P1
CN49-24P1
CN50-24P1
CN51-24P1
CN52-24P1
CN53-24P1
CN54-24P1
CN55-24P1
CN56-24P1
CN57-24P1
CN58-24P1
CN59-24P1
CN60-24P1
CN61-24P1
CN62-24P1
CN63-24P1
CN64-24P1
CN65-24P1
CN66-24P1
CN67-24P1
CN68-24P1
CN69-24P1
CN70-24P1
CN71-24P1
CN72-24P1
CN73-24P1
CN74-24P1
CN75-24P1
CN76-24P1
CN77-24P1
CN78-24P1
CN79-24P1
CN80-24P1
CN81-24P1
CN82-24P1
CN83-24P1
CN84-24P1
CN85-24P1
CN86-24P1
CN87-24P1
CN88-24P1
CN89-24P1
CN90-24P1
CN91-24P1
CN92-24P1
CN93-24P1
CN94-24P1
CN95-24P1
CN96-24P1
CN97-24P1
CN98-24P1
CN99-24P1
CN100-24P1
CN101-24P1
CN102-24P1
CN103-24P1
CN104-24P1
CN105-24P1
CN106-24P1
CN107-24P1
CN108-24P1
CN109-24P1
CN110-24P1
CN111-24P1
CN112-24P1
CN113-24P1
CN114-24P1
CN115-24P1
CN116-24P1
CN117-24P1
CN118-24P1
CN119-24P1
CN120-24P1
CN121-24P1
CN122-24P1
CN123-24P1
CN124-24P1
CN125-24P1
CN126-24P1
CN127-24P1
CN128-24P1
CN129-24P1
CN130-24P1
CN131-24P1
CN132-24P1
CN133-24P1
CN134-24P1
CN135-24P1
CN136-24P1
CN137-24P1
CN138-24P1
CN139-24P1
CN140-24P1
CN141-24P1
CN142-24P1
CN143-24P1
CN144-24P1
CN145-24P1
CN146-24P1
CN147-24P1
CN148-24P1
CN149-24P1
CN150-24P1
CN151-24P1
CN152-24P1
CN153-24P1
CN154-24P1
CN155-24P1
CN156-24P1
CN157-24P1
CN158-24P1
CN159-24P1
CN160-24P1
CN161-24P1
CN162-24P1
CN163-24P1
CN164-24P1
CN165-24P1
CN166-24P1
CN167-24P1
CN168-24P1
CN169-24P1
CN170-24P1
CN171-24P1
CN172-24P1
CN173-24P1
CN174-24P1
CN175-24P1
CN176-24P1
CN177-24P1
CN178-24P1
CN179-24P1
CN180-24P1
CN181-24P1
CN182-24P1
CN183-24P1
CN184-24P1
CN185-24P1
CN186-24P1
CN187-24P1
CN188-24P1
CN189-24P1
CN190-24P1
CN191-24P1
CN192-24P1
CN193-24P1
CN194-24P1
CN195-24P1
CN196-24P1
CN197-24P1
CN198-24P1
CN199-24P1
CN200-24P1
CN201-24P1
CN202-24P1
CN203-24P1
CN204-24P1
CN205-24P1
CN206-24P1
CN207-24P1
CN208-24P1
CN209-24P1
CN210-24P1
CN211-24P1
CN212-24P1
CN213-24P1
CN214-24P1
CN215-24P1
CN216-24P1
CN217-24P1
CN218-24P1
CN219-24P1
CN220-24P1
CN221-24P1
CN222-24P1
CN223-24P1
CN224-24P1
CN225-24P1
CN226-24P1
CN227-24P1
CN228-24P1
CN229-24P1
CN230-24P1
CN231-24P1
CN232-24P1
CN233-24P1
CN234-24P1
CN235-24P1
CN236-24P1
CN237-24P1
CN238-24P1
CN239-24P1
CN240-24P1
CN241-24P1
CN242-24P1
CN243-24P1
CN244-24P1
CN245-24P1
CN246-24P1
CN247-24P1
CN248-24P1
CN249-24P1
CN250-24P1
CN251-24P1
CN252-24P1
CN253-24P1
CN254-24P1
CN255-24P1
CN256-24P1
CN257-24P1
CN258-24P1
CN259-24P1
CN260-24P1
CN261-24P1
CN262-24P1
CN263-24P1
CN264-24P1
CN265-24P1
CN266-24P1
CN267-24P1
CN268-24P1
CN269-24P1
CN270-24P1
CN271-24P1
CN272-24P1
CN273-24P1
CN274-24P1
CN275-24P1
CN276-24P1
CN277-24P1
CN278-24P1
CN279-24P1
CN280-24P1
CN281-24P1
CN282-24P1
CN283-24P1
CN284-24P1
CN285-24P1
CN286-24P1
CN287-24P1
CN288-24P1
CN289-24P1
CN290-24P1
CN291-24P1
CN292-24P1
CN293-24P1
CN294-24P1
CN295-24P1
CN296-24P1
CN297-24P1
CN298-24P1
CN299-24P1
CN300-24P1
CN301-24P1
CN302-24P1
CN303-24P1
CN304-24P1
CN305-24P1
CN306-24P1
CN307-24P1
CN308-24P1
CN309-24P1
CN310-24P1
CN311-24P1
CN312-24P1
CN313-24P1
CN314-24P1
CN315-24P1
CN316-24P1
CN317-24P1
CN318-24P1
CN319-24P1
CN320-24P1
CN321-24P1
CN322-24P1
CN323-24P1
CN324-24P1
CN325-24P1
CN326-24P1
CN327-24P1
CN328-24P1
CN329-24P1
CN330-24P1
CN331-24P1
CN332-24P1
CN333-24P1
CN334-24P1
CN335-24P1
CN336-24P1
CN337-24P1
CN338-24P1
CN339-24P1
CN340-24P1
CN341-24P1
CN342-24P1
CN343-24P1
CN344-24P1
CN345-24P1
CN346-24P1
CN347-24P1
CN348-24P1
CN349-24P1
CN350-24P1
CN351-24P1
CN352-24P1
CN353-24P1
CN354-24P1
CN355-24P1
CN356-24P1
CN357-24P1
CN358-24P1
CN359-24P1
CN360-24P1
CN361-24P1
CN362-24P1
CN363-24P1
CN364-24P1
CN365-24P1
CN366-24P1
CN367-24P1
CN368-24P1
CN369-24P1
CN370-24P1
CN371-24P1
CN372-24P1
CN373-24P1
CN374-24P1
CN375-24P1
CN376-24P1
CN377-24P1
CN378-24P1
CN379-24P1
CN380-24P1
CN381-24P1
CN382-24P1
CN383-24P1
CN384-24P1
CN385-24P1
CN386-24P1
CN387-24P1
CN388-24P1
CN389-24P1
CN390-24P1
CN391-24P1
CN392-24P1
CN393-24P1
CN394-24P1
CN395-24P1
CN396-24P1
CN397-24P1
CN398-24P1
CN399-24P1
CN400-24P1
CN401-24P1
CN402-24P1
CN403-24P1
CN404-24P1
CN405-24P1
CN406-24P1
CN407-24P1
CN408-24P1
CN409-24P1
CN410-24P1
CN411-24P1
CN412-24P1
CN413-24P1
CN414-24P1
CN415-24P1
CN416-24P1
CN417-24P1
CN418-24P1
CN419-24P1
CN420-24P1
CN421-24P1
CN422-24P1
CN423-24P1
CN424-24P1
CN425-24P1
CN426-24P1
CN427-24P1
CN428-24P1
CN429-24P1
CN430-24P1
CN431-24P1
CN432-24P1
CN433-24P1
CN434-24P1
CN435-24P1
CN436-24P1
CN437-24P1
CN438-24P1
CN439-24P1
CN440-24P1
CN441-24P1
CN442-24P1
CN443-24P1
CN444-24P1
CN445-24P1
CN446-24P1
CN447-24P1
CN448-24P1
CN449-24P1
CN450-24P1
CN451-24P1
CN452-24P1
CN453-24P1
CN454-24P1
CN455-24P1
CN456-24P1
CN457-24P1
CN458-24P1
CN459-24P1
CN460-24P1
CN461-24P1
CN462-24P1
CN463-24P1
CN464-24P1
CN465-24P1
CN466-24P1
CN467-24P1
CN468-24P1
CN469-24P1
CN470-24P1
CN471-24P1
CN472-24P1
CN473-24P1
CN474-24P1
CN475-24P1
CN476-24P1
CN477-24P1
CN478-24P1
CN479-24P1
CN480-24P1
CN481-24P1
CN482-24P1
CN483-24P1
CN484-24P1
CN485-24P1
CN486-24P1
CN487-24P1
CN488-24P1
CN489-24P1
CN490-24P1
CN491-24P1
CN492-24P1
CN493-24P1
CN494-24P1
CN495-24P1
CN496-24P1
CN497-24P1
CN498-24P1
CN499-24P1
CN500-24P1
CN501-24P1
CN502-24P1
CN503-24P1
CN504-24P1
CN505-24P1
CN506-24P1
CN507-24P1
CN508-24P1
CN509-24P1
CN510-24P1
CN511-24P1
CN512-24P1
CN513-24P1
CN514-24P1
CN515-24P1
CN516-24P1
CN517-24P1
CN518-24P1
CN519-24P1
CN520-24P1
CN521-24P1
CN522-24P1
CN523-24P1
CN524-24P1
CN525-24P1
CN526-24P1
CN527-24P1
CN528-24P1
CN529-24P1
CN530-24P1
CN531-24P1
CN532-24P1
CN533-24P1
CN534-24P1
CN535-24P1
CN536-24P1
CN537-24P1
CN538-24P1
CN539-24P1
CN540-24P1
CN541-24P1
CN542-24P1
CN543-24P1
CN544-24P1
CN545-24P1
CN546-24P1
CN547-24P1
CN548-24P1
CN549-24P1
CN550-24P1
CN551-24P1
CN552-24P1
CN553-24P1
CN554-24P1
CN555-24P1
CN556-24P1
CN557-24P1
CN558-24P1
CN559-24P1
CN560-24P1
CN561-24P1
CN562-24P1
CN563-24P1
CN564-24P1
CN565-24P1
CN566-24P1
CN567-24P1
CN568-24P1
CN569-24P1
CN570-24P1
CN571-24P1
CN572-24P1
CN573-24P1
CN574-24P1
CN575-24P1
CN576-24P1
CN577-24P1
CN578-24P1
CN579-24P1
CN580-24P1
CN581-24P1
CN582-24P1
CN583-24P1
CN584-24P1
CN585-24P1
CN586-24P1
CN587-24P1
CN588-24P1
CN589-24P1
CN590-24P1
CN591-24P1
CN592-24P1
CN593-24P1
CN594-24P1
CN595-24P1
CN596-24P1
CN597-24P1
CN598-24P1
CN599-24P1
CN600-24P1
CN601-24P1
CN602-24P1
CN603-24P1
CN604-24P1
CN605-24P1
CN606-24P1
CN607-24P1
CN608-24P1
CN609-24P1
CN610-24P1
CN611-24P1
CN612-24P1
CN613-24P1
CN614-24P1
CN615-24P1
CN616-24P1
CN617-24P1
CN618-24P1
CN619-24P1
CN620-24P1
CN621-24P1
CN622-24P1
CN623-24P1
CN624-24P1
CN625-24P1
CN626-24P1
CN627-24P1
CN628-24P1
CN629-24P1
CN630-24P1
CN631-24P1
CN632-24P1
CN633-24P1
CN634-24P1
CN635-24P1
CN636-24P1
CN637-24P1
CN638-24P1
CN639-24P1
CN640-24P1
CN641-24P1
CN642-24P1
CN643-24P1
CN644-24P1
CN645-24P1
CN646-24P1
CN647-24P1
CN648-24P1
CN649-24P1
CN650-24P1
CN651-24P1
CN652-24P1
CN653-24P1
CN654-24P1
CN655-24P1
CN656-24P1
CN657-24P1
CN658-24P1
CN659-24P1
CN660-24P1
CN661-24P1
CN662-24P1
CN663-24P1
CN664-24P1
CN665-24P1
CN666-24P1
CN667-24P1
CN668-24P1
CN669-24P1
CN670-24P1
CN671-24P1
CN672-24P1
CN673-24P1
CN674-24P1
CN675-24P1
CN676-24P1
CN677-24P1
CN678-24P1
CN679-24P1
CN680-24P1
CN681-24P1
CN682-24P1
CN683-24P1
CN684-24P1
CN685-24P1
CN686-24P1
CN687-24P1
CN688-24P1
CN689-24P1
CN690-24P1
CN691-24P1
CN692-24P1
CN693-24P1
CN694-24P1
CN695-24P1
CN696-24P1
CN697-24P1
CN698-24P1
CN699-24P1
CN700-24P1
CN701-24P1
CN702-24P1
CN703-24P1
CN704-24P1
CN705-24P1
CN706-24P1
CN707-24P1
CN708-24P1
CN709-24P1
CN710-24P1
CN711-24P1
CN712-24P1
CN713-24P1
CN714-24P1
CN715-24P1
CN716-24P1
CN717-24P1
CN718-24P1
CN719-24P1
CN720-24P1
CN721-24P1
CN722-24P1
CN723-24P1
CN724-24P1
CN725-24P1
CN726-24P1
CN727-24P1
CN728-24P1
CN729-24P1
CN730-24P1
CN731-24P1
CN732-24P1
CN733-24P1
CN734-24P1
CN735-24P1
CN736-24P1
CN737-24P1
CN738-24P1
CN739-24P1
CN740-24P1
CN741-24P1
CN742-24P1
CN743-24P1
CN744-24P1
CN745-24P1
CN746-24P1
CN747-24P1
CN748-24P1
CN749-24P1
CN750-24P1
CN751-24P1
CN752-24P1
CN753-24P1
CN754-24P1
CN755-24P1
CN756-24P1
CN757-24P1
CN758-24P1
CN759-24P1
CN760-24P1
CN761-24P1
CN762-24P1
CN763-24P1
CN764-24P1
CN765-24P1
CN766-24P1
CN767-24P1
CN768-24P1
CN769-24P1
CN770-24P1
CN771-24P1
CN772-24P1
CN773-24P1
CN774-24P1
CN775-24P1
CN776-24P1
CN777-24P1
CN778-24P1
CN779-24P1
CN780-24P1
CN781-24P1
CN782-24P1
CN783-24P1
CN784-24P1
CN785-24P1
CN786-24P1
CN787-24P1
CN788-24P1
CN789-24P1
CN790-24P1
CN791-24P1
CN792-24P1
CN793-24P1
CN794-24P1
CN795-24P1
CN796-24P1
CN797-24P1
CN798-24P1
CN799-24P1
CN800-24P1
CN801-24P1
CN802-24P1
CN803-24P1
CN804-24P1
CN805-24P1
CN806-24P1
CN807-24P1
CN808-24P1
CN809-24P1
CN810-24P1
CN811-24P1
CN812-24P1
CN813-24P1
CN814-24P1
CN815-24P1
CN816-24P1
CN817-24P1
CN818-24P1
CN819-24P1
CN820-24P1
CN821-24P1
CN822-24P1
CN823-24P1
CN824-24P1
CN825-24P1
CN826-24P1
CN827-24P1
CN828-24P1
CN829-24P1
CN830-24P1
CN831-24P1
CN832-24P1
CN833-24P1
CN834-24P1
CN835-24P1
CN836-24P1
CN837-24P1
CN838-24P1
CN839-24P1
CN840-24P1
CN841-24P1
CN842-24P1
CN843-24P1
CN844-24P1
CN845-24P1
CN846-24P1
CN847-24P1
CN848-24P1
CN849-24P1
CN850-24P1
CN851-24P1
CN852-24P1
CN853-24P1
CN854-24P1
CN855-24P1
CN856-24P1
CN857-24P1
CN858-24P1
CN859-24P1
CN860-24P1
CN861-24P1
CN862-24P1
CN863-24P1
CN864-24P1
CN865-24P1
CN866-24P1
CN867-24P1
CN868-24P1
CN869-24P1
CN870-24P1
CN871-24P1
CN872-24P1
CN873-24P1
CN874-24P1
CN875-24P1
CN876-24P1
CN877-24P1
CN878-24P1
CN879-24P1
CN880-24P1
CN881-24P1
CN882-24P1
CN883-24P1
CN884-24P1
CN885-24P1
CN886-24P1
CN887-24P1
CN888-24P1
CN889-24P1
CN890-24P1
CN891-24P1
CN892-24P1
CN893-24P1
CN894-24P1
CN895-24P1
CN896-24P1
CN897-24P1
CN898-24P1
CN899-24P1
CN900-24P1
CN901-24P1
CN902-24P1
CN903-24P1
CN904-24P1
CN905-24P1
CN906-24P1
CN907-24P1
CN908-24P1
CN909-24P1
CN910-24P1
CN911-24P1
CN912-24P1
CN913-24P1
CN914-24P1
CN915-24P1
CN916-24P1
CN917-24P1
CN918-24P1
CN919-24P1
CN920-24P1
CN921-24P1
CN922-24P1
CN923-24P1
CN924-24P1
CN925-24P1
CN926-24P1
CN927-24P1
CN928-24P1
CN929-24P1
CN930-24P1
CN931-24P1
CN932-24P1
CN933-24P1
CN934-24P1
CN935-24P1
CN936-24P1
CN937-24P1
CN938-24P1
CN939-24P1
CN940-24P1
CN941-24P1
CN942-24P1
CN943-24P1
CN944-24P1
CN945-24P1
CN946-24P1
CN947-24P1
CN948-24P1
CN949-24P1
CN950-24P1
CN951-24P1
CN952-24P1
CN953-24P1
CN954-24P1
CN955-24P1
CN956-24P1
CN957-24P1
CN958-24P1
CN959-24P1
CN960-24P1
CN961-24P1
CN962-24P1
CN963-24P1
CN964-24P1
CN965-24P1
CN966-24P1
CN967-24P1
CN968-24P1
CN969-24P1
CN970-24P1
CN971-24P1
CN972-24P1
CN973-24P1
CN974-24P1
CN975-24P1
CN976-24P1
CN977-24P1
CN978-24P1
CN979-24P1
CN980-24P1
CN981-24P1
CN982-24P1
CN983-24P1
CN984-24P1
CN985-24P1
CN986-24P1
CN987-24P1
CN988-24P1
CN989-24P1
CN990-24P1
CN991-24P1
CN992-24P1
CN993-24P1
CN994-24P1
CN995-24P1
CN996-24P1
CN997-24P1
CN998-24P1
CN999-24P1
CN1000-24P1


FUNCTION BOARD ASSEMBLY
BOARD ASSEMBLY
HEADPHONE
SWITCH
PHONES
PHONES LEVEL
REMOTE
SENSOR
(PD-M601)
(PD-M551)
(PD-M201)
(PD-M601)
(PD-M551)
(PD-M201)
(CXD5204Q)
(CXD3398Q)
(CXD2505Q)

7. PCB PARTS LIST

NOTES:

- *Part without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).

560 Ω	*56 × 10¹*	*561*	*RD1/8PM 5 6 1 J*
47k Ω	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5 Ω	*0R5*		*RN2H 0 R 5 K*
1 Ω	*010*		*RS1P 0 1 0 K*

Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).

5.62k Ω	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
◉		Mother board assembly	PWM1583
		Motor board assembly	
		Mechanism board assembly	
		Loading board assembly	
		Select board assembly	
◉		Sub board assembly	PWX1224
		├ Function board assembly	
		├ Switch board assembly	
		└ Headphone board assembly	

◉ MOTHER BOARD ASSEMBLY (PWM1583)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC151	SERVO IC	CXA1372Q
⚠	IC20	REGULATOR IC	TA2019P
⚠	IC201, 202	POWER OP-AMP, IC	LA6520
	IC21	REGULATOR, IC	NJM2930L05
	IC301	EFM DEMODULATION IC	CXD2500AQ
	IC351	MICROCOMPUTER, IC	PD4396B
	IC401	D/A CONVERTER, IC	PD2026A
	IC405	OP-AMP IC	NJM4565D-D
	IC406	OP-AMP IC	BA15218
	Q322	TRANSISTOR	DTC124ES
	Q391	TRANSISTOR	2SC1740S
	Q403, 404	TRANSISTOR	2SD2144S
	Q405	TRANSISTOR	DTC124ES
	Q451, 452	TRANSISTOR	DTA124ES
	Q453, 454	TRANSISTOR	2SB1296
⚠	D11-14	DIODE	11ES2
	D218	ZENNER DIODE	MTZJ6.2B
	D351	DIODE	1SS254
	D391-397	DIODE	1SS254
⚠	D52	DIODE	11ES2
	D54	ZENNER DIODE	MTZJ18B

COILS

Mark	No.	Description	Part No.
	L391	AXIAL INDUCTOR	LAU010K
	L395, 396	AXIAL INDUCTOR	LAU010K

CAPACITORS

Mark	No.	Description	Part No.
	C11, 13	CERAMIC CAPACITOR	CKCYF103Z50
	C15	CERAMIC CAPACITOR	CKCYF103Z50
	C153	ELECTR. CAPACITOR	CEAS101M10
	C155	CERAMIC CAPACITOR	CKCYB182K50
	C156	CERAMIC CAPACITOR	CGCYX333K25
	C157	CERAMIC CAPACITOR	CGCYX103K25
	C158, 159	CERAMIC CAPACITOR	CGCYX104K25
	C16	CERAMIC CAPACITOR	CKCYF103Z50
	C160	ELECTR. CAPACITOR	CEAS4R7M50
	C161	CERAMIC CAPACITOR	CGCYX104K25
	C162	ELECTR. CAPACITOR	CEAS4R7M50
	C163	CERAMIC CAPACITOR	CGCYX104K25
	C164	CERAMIC CAPACITOR	CGCYX103K25
	C167	CERAMIC CAPACITOR	CKCYF103Z50
	C168	CERAMIC CAPACITOR	CGCYX333K25
	C169	CERAMIC CAPACITOR	CGCYX103K25
	C17	CERAMIC CAPACITOR	CKCYF103Z50
	C170	CERAMIC CAPACITOR	CKCYB332K50
	C171, 172	CERAMIC CAPACITOR	CKCYB472K50
	C205, 210	CERAMIC CAPACITOR	CKCYF103Z50
	C216, 217	ELECTR. CAPACITOR	CEAS330M16
	C218	CERAMIC CAPACITOR	CGCYX103K25
	C22	CERAMIC CAPACITOR	CKCYF103Z50
	C25	ELECTR. CAPACITOR	CEAS332M16
	C26	ELECTR. CAPACITOR	CEAS102M16
	C27	ELECTROLYTIC CAPACIT	CEAS471M6R3
	C28	ELECTR. CAPACITOR	CEAS101M10
	C29	ELECTROLYTIC CAPACIT	CEAS471M6R3
	C301	CERAMIC CAPACITOR	CGCYX104K25
	C302	ELECTROLYTIC CAPACIT	CEAS471M6R3
	C306	CERAMIC CAPACITOR	CKCYB152K50
	C307	CERAMIC CAPACITOR	CGCYX473K25
	C308	CERAMIC CAPACITOR	CGCYX103K25
	C309	ELECTR. CAPACITOR	CEASR47M50
	C351	ELECTROLYTIC CAPACIT	CEAS471M6R3
	C353, 361	CERAMIC CAPACITOR	CKCYF103Z50
	C393	CERAMIC CAPACITOR	CCCSL101J50
	C403	CERAMIC CAPACITOR	CCCCH120J50
	C404	CERAMIC CAPACITOR	CCCCH220J50
	C413-416	FILM CAPACITOR (0.1μ)	PCM10332

Mark	No.	Description	Part No.
	C417	CERAMIC CAPACITOR	CKCYF103Z50
	C421	FILM CAPACITOR (0.1μ)	PCL1032
	C429, 430	CERAMIC CAPACITOR	CCCCH390J50
	C431, 432	ELECTR. CAPACITOR	CEAS330M16
	C433, 434	ALUMINUM (22μ/25V)	PCH1107
	C435-438	CERAMIC CAPACITOR	CCCCH390J50
	C441, 442	FILM CAPACITOR (0.0015μ)	PCL1030
	C451, 452	ELECTR. CAPACITOR	CEAS4R7M50
	C461	CERAMIC CAPACITOR	CKCYF103Z50
	C52	ELECTR. CAPACITOR	CEAS101M35
	C60	ELECTR. CAPACITOR	CEAS010M50
RESISTORS			
	VR151, 152	VR(22kΩ)	RCP1046
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	X351	CERAMIC RESONATOR (4.19MHz)	VSS1014
	X401	XTAL RES (OSC) (16.9344MHz)	PSS1008
	CN131	CONNECTOR FOR FFC (12P)	12FM-1.0BT
	CN351	32P FFC CONNECTOR	HLEM32S-1
	JA391, 392	JACK/12V (CONTROL IN, OUT)	PKN1004
	JA393	MINI JACK(CD DECK SYNCHRO)	PKN1005
	JA401	2P PIN JACK (LINE OUT)	PKB1009

MOTOR BOARD ASSEMBLY

Motor board assembly has not service parts.

MECHANISM BOARD ASSEMBLY

SWITCH

	S610	PUSH SWITCH (INSIDE)	DSG1016

LOADING BOARD ASSEMBLY

SWITCHES

	S601, 602	PUSH SWITCH (LPS1, LPS2)	DSG1016

SELECT BOARD ASSEMBLY

SWITCHES

	S603-606	PUSH SWITCH (MZS1, MZS2, DCHM, DCNT)	DSG1016

Mark	No.	Description	Part No.

FUNCTION BOARD ASSEMBLY

SEMICONDUCTORS

	D701-704	DIODE	1SS254
	D708, 709	DIODE	1SS254

SWITCHES

	S701-705	TACT SWITCH (DISC 2, 1, AUTO FADER, DELETE, PROGRAM)	PSG1006
	S717-732	TACT SWITCH (COMPU PGM EDIT, HI-LITE SCAN, DISC 3, 4, ADLC, TIME FADE EDIT, DISC 5, 6, ❙❙, REPEAT, ■, TIME, ▶, RANDOM PLAY, ⏮ ◀◀, ▶▶ ⏭)	PSG1006

RESISTOR

	R701	CARBON FILM RESISTOR	RD1/6PM471J

OTHERS

	REMOTE SENSOR		SBX1610-51
	CN701	32P FFC CONNECTOR	HLEM32R-1
	V701	FL INDICATOR TUBE	PEL1067

SWITCH BOARD ASSEMBLY

SEMICONDUCTOR

	D801	LED	PCX1019

SWITCHES

	S801, 802	TACT SWITCH (POWER, EJECT)	PSG1006

HEADPHONE BOARD ASSEMBLY

COILS

	L501-503	AXIAL INDUCTOR	LAU010K

CAPACITORS

	C501, 502	CERAMIC CAPACITOR	CKCYF103Z50
	C503	CERAMIC CAPACITOR	CKCYF473Z50

RESISTORS

	VR501	VARIABLE RESISTOR (PHONES LEVEL)	PCS1003

OTHERS

	JA501	HEADPHONE JACK (PHONES)	RKN1002

8. ADJUSTMENTS

8.1. Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 − 4, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	TP1, Pin 6 (FCS. ERR)	None
2	Tracking error balance verification	TP1, Pin 2 (TRK. ERR)	None
3	Pickup radial/tangential direction tilt adjustment	TP1, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	TP1, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	TP1, Pin 5 (FCS. IN) TP1, Pin 6 (FCS. ERR)	VR152 (FCS. GAN)
6	Tracking servo loop gain adjustment	TP1, Pin 3 (TRK. IN) TP1, Pin 2 (TRK. ERR)	VR151 (TRK. GAN)

● **Abbreviation table**

FCS. ERR :Focus Error
TRK. ERR :Tracking Error
FCS GAN :Focus Gain
TRK GAN :Tracking Gain
FCS. IN :Focus In
TRK. IN :Tracking In

● Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. Low pass filter (39kΩ +0.001 μF)
5. Resistor (100 kΩ)
6. Standard tools

● Test Point and Adjustment Variable Resistor Positions

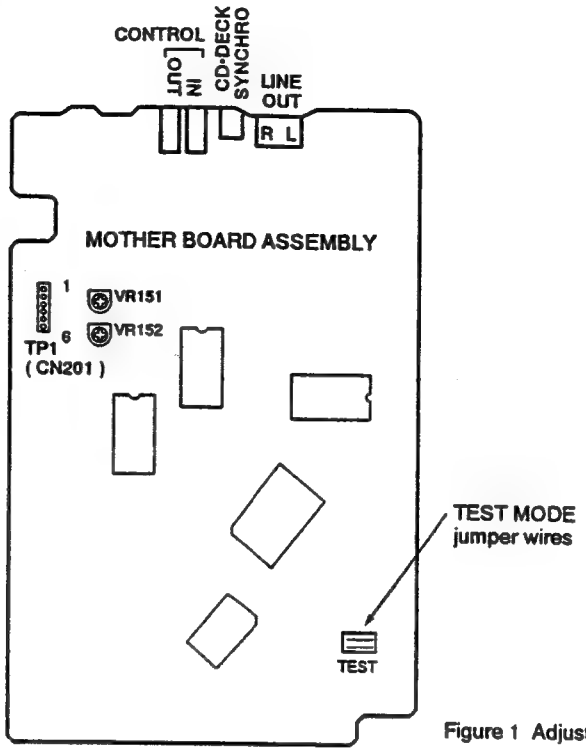


Figure 1 Adjustment Locations

● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

● Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.

1. Unplug the power cord from the AC socket.
2. Short the test mode jumper wires. (See Figure 1.)
3. Plug the power cord back into the AC socket.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 – 3.

[Release from test mode]

Here is the procedure for releasing the test mode:

1. Press the STOP key and stop all operations.
2. Unplug the power cord from the AC socket.

[Operations of the keys in test mode]

Code	Key Name	Function in Test Mode	Explanation
	PGM (PROGRAM)	Focus servo close	The laser diode is lit up and the focus actuator is lifted up, then lowered slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled up, then the actuator is lowered and raised three times and returned to its original position.
▷	PLAY	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
□□	PAUSE	Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.

Code	Key Name	Function in Test Mode	Explanation
⏮	TRACK / MANUAL SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
⏭	TRACK / MANUAL SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
⏹	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
⏏	EJECT	CD magazine eject	Stores Disc 1 in the CD magazine, then ejects the CD magazine. However, even though the CD magazine is ejected, the pickup does not return to the park position. Even if the CD magazine is mounted again, the pickup remains where it is.

Note : When inserting the magazine, disc 1 of the magazine is loaded automatically.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.
Here is the key operation sequence for playing back a disc in test mode.

PGM(PROGRAM)	Lights up the laser diode and closes the focus servo.
⇩	
PLAY ▷	Starts the spindle motor and closes the spindle servo.
⇩	
PAUSE ▯▯	Closes the tracking servo.

- Wait at least 2-3 seconds between each of these operations.

1. Focus Offset Verification

● Objective ● Symptom when out of adjustment	Verify the DC offset for the focus error amp. The model does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR) [Settings] 5 mV/division 10 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, stopped (just the Power switch on) None None needed
[Procedure] Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is 0 ± 50 mV.			

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 – 4, the pickup block may be defective.

2. Tracking Error Balance Verification

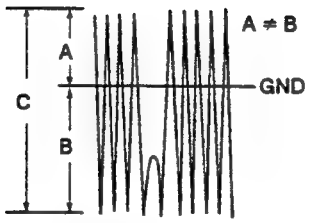
● Objective ● Symptom when out of adjustment	To verify that there is no variation in the sensitivity of the tracking photo diode. Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter. [Settings] 50 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, focus and spindle servos closed and tracking servo open None YEDS-7

[Procedure]

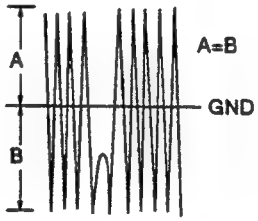
1. Move the pickup to midway across the disc (R=35 mm) with the TRACK/MANUAL SEARCH FWD ▷▷ • ▷▷| or REV |◁◁ • ◁◁ key.
2. Press the PGM (PROGRAM) key, then the PLAY ▷ key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

$$A \geqq B : \frac{A-B}{C} \times \frac{1}{2} \leqq 0.1$$

$$A < B : \frac{B-A}{C} \times \frac{1}{2} \leqq 0.1$$



When there is a DC component



When there is no DC component

3. Pickup Radial/Tangential Tilt Adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken;some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF). [Settings] 20 mV/division 200 ns/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play Pickup radial tilt adjustment screw and tangential tilt adjustment screw YEDS-7

[Procedure]

1. Press the TRACK/MANUAL SEARCH FWD ▷▷ • ▷▷| or REV |◁◁ • ◁◁ key to move the pickup to halfway across the disc (R=35mm).
   Press the PGM(PROGRAM) key, the PLAY ▷ key, then the PAUSE ▯▯ key in that order to close the respective servos and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
5. When the adjustment is completed, lock the radial and tangential adjustment screw.
   Note:Radial and tangential mean the directions relative to the disc shown in Figure 2.

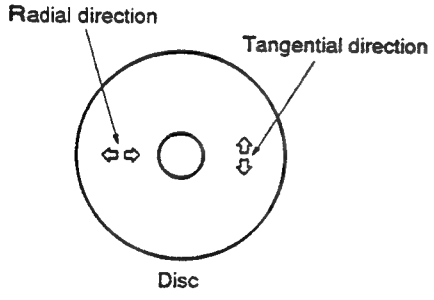
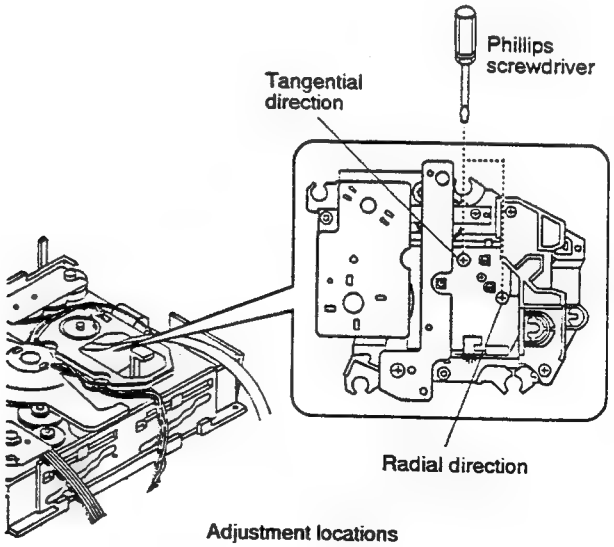


Figure 2



Adjustment locations

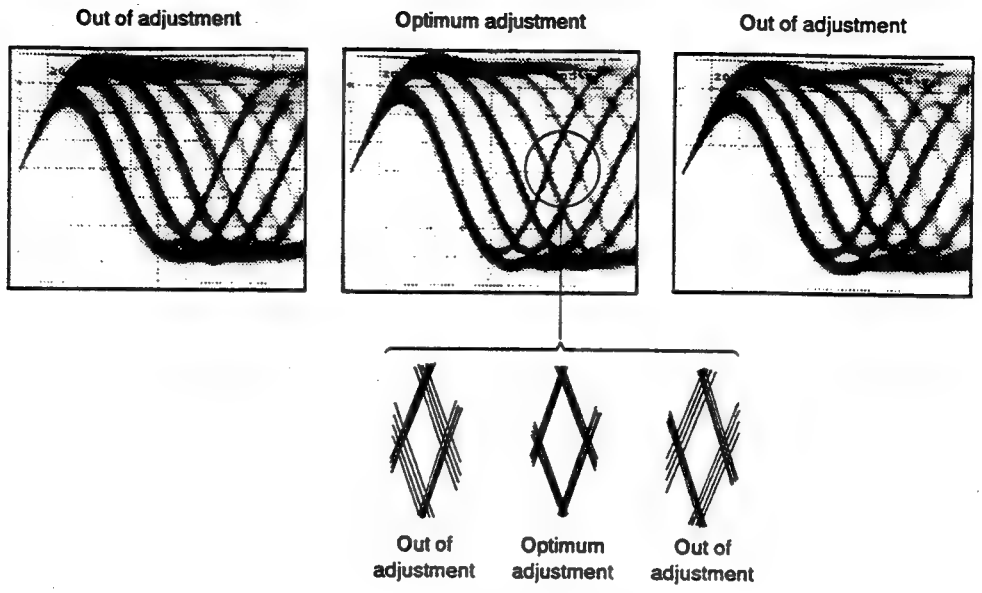


Figure 3 Eye pattern

4. RF Level Verification

● Objective ● Symptom when out of adjustment	To verify the playback RF signal amplitude No play or no search		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF). [Settings] 50 mV/division 10 ms/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play None YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the TRACK/MANUAL SEARCH FWD ▷▷ • ▷▷| or REV |◁◁ • ◁◁ key, then press the PGM (PROGRAM) key, the PLAY ▷ key, then the PAUSE ▯▯ key in that order to close the respective servos and put the player into play mode.
2. Verify the RF signal amplitude is 1.2 Vp-p ± 0.2 V.

5. Focus Servo Loop Gain Adjustment

● Objective ● Symptom when out of adjustment	To optimize the focus servo loop gain. Playback does not start or focus actuator noisy.		
● Measurement instrument connections	See figure 4. [Settings] CH1 CH2 20 mV/division 5 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR152 (FCS. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the TRACK/MANUAL SEARCH FWD ▷▷ • ▷▷| or REV |◁◁ • ◁◁ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY ▷ key, then the PAUSE ▯▯ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR152 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

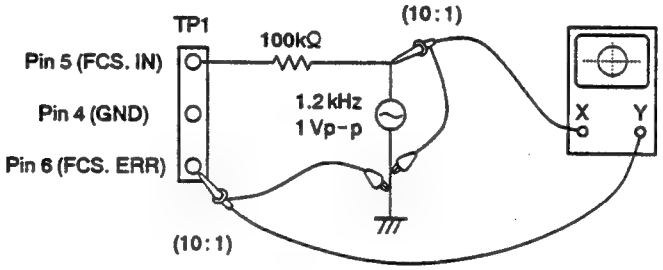


Figure 4

Focus Gain Adjustment

Higher gain | Optimum gain | Lower gain

6. Tracking Servo Loop Gain Adjustment

● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 5. [Settings] CH1 CH2 50 mV/division 20 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR151 (TRK. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the TRACK/MANUAL SEARCH FWD ▷▷ • ▷▷| or REV |◁◁ • ◁◁ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY ▷ key, then the PAUSE ▯▯ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR151 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

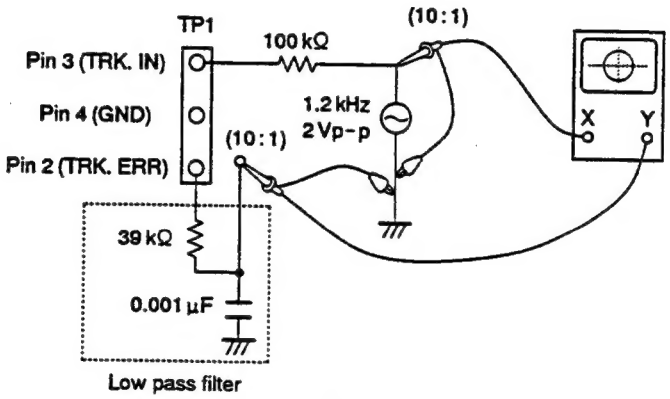
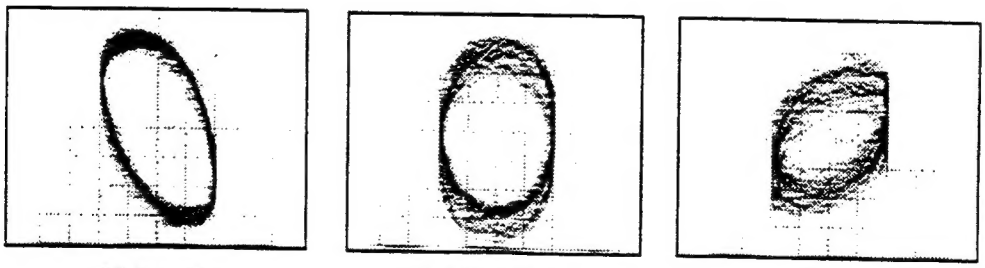


Figure 5

Tracking Gain Adjustment



Higher gain | Optimum gain | Lower gain

◉ MOTHER BOARD ASSEMBLY (PWM1582 and PWM1579)

PWM1582 , PWM1579 and PWM1583 have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		PWM1583	PWM1582	PWM1579	
	IC405	NJM4565D-D	NJM4558D-D	NJM4558D-D	
	IC406	BA15218	•••••	•••••	
	D391	1SS254	1SS254	•••••	
	C433, 434 (22 μ /25V)	PCH1107	•••••	•••••	
	C433, 434	•••••	CEAS220M25	CEAS220M25	
	R445, 446	RD1/6PM271J	RD1/6PM681J	RD1/6PM681J	
	R447, 448	RD1/6PM471J	•••••	•••••	
	R470, 471	RD1/6PM470J	•••••	•••••	
	CN351 (32P FFC connector)	HLEM32S-1	HLEM32S-1	•••••	
	CN351 (30P FFC connector)	•••••	•••••	HLEM30S-1	

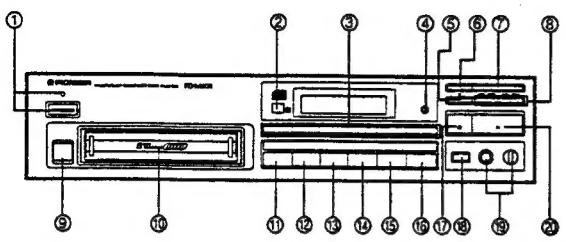
FUNCTION BOARD ASSEMBLY

Function board assembly of PD - M551 and PD - M501 and Function board assembly of PD - M601 have the same construction except for the following :

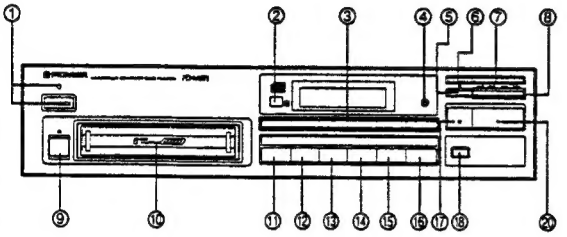
Mark	Symbol & Description	Part No.			Remarks
		PD-M601	PD-M551	PD-M501	
	CN701 (32P FFC connector)	HLEM32R-1	HLEM32R-1	•••••	
	CN701 (30P FFC connector)	•••••	•••••	HLEM30R-1	
	Remote sensor	SBX1610-51	SBX1610-51	•••••	

10. PANEL FACILITIES

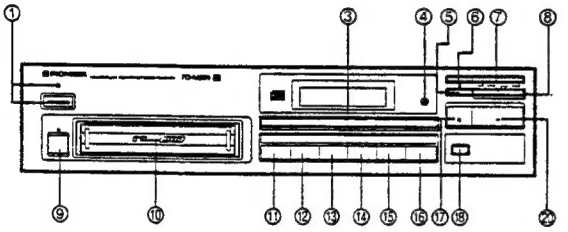
PD-M601



PD-M551



PD-M501



FRONT PANEL

① **POWER STANDBY/ON switch and STANDBY indicator**

② **Remote sensor (PD-M601/PD-M551 only)**
Receives the signal from the remote control unit.
- The PD-M501 is not equipped with the remote sensor.

③ **Disc number buttons (DISC 1 - DISC 6)**

④ **TIME button**

⑤ **Stop button (■)**

⑥ **REPEAT button**

⑦ **RANDOM PLAY button**

⑧ **Track/Manual search buttons (⏮ ◀◀/▶▶ ⏭)**

⑨ **EJECT button (⏏)**

⑩ **Magazine insertion slot**

⑪ **PROGRAM button**

⑫ **DELETE button**

⑬ **AUTO FADER button**

⑭ **HI-LITE SCAN button**

⑮ **COMPU PGM EDIT button**

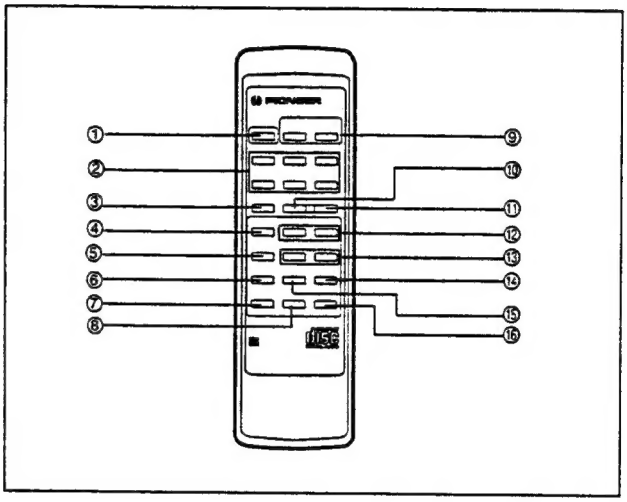
⑯ **TIME FADE EDIT button**

⑰ **Pause button (❚❚)**

⑱ **ADLC (Automatic Digital Level Controller) button**

⑲ **Headphones jack (PHONES) and headphones volume control (PHONES LEVEL) (PD-M601 only)**

⑳ **Play button (▶)**



REMOTE CONTROL UNIT (PD-M601/PD-M551 only)

Remote control buttons with the same names or marks as buttons on the front panel of the player control the same operations as the corresponding front panel buttons.

① **POWER button**

② **DISC NUMBER buttons (1 - 6)**

③ **STOP button (■)**

④ **RANDOM PLAY button**

⑤ **HI-LITE SCAN button**

⑥ **FADER button**

⑦ **ADLC (Automatic Digital Level Controller) button**

⑧ **CHECK button**

⑨ **OUTPUT LEVEL buttons (+/–)**

⑩ **PAUSE button (❚❚)**

⑪ **PLAY button (▶)**

⑫ **MANUAL search buttons (◀◀ / ▶▶)**

⑬ **TRACK search buttons (⏮ / ⏭)**

⑭ **DELETE button**

⑮ **PGM (program) button**

⑯ **CLEAR button**

11. SPECIFICATIONS

1. General

Type ..... Compact disc digital audio system
Power requirements
U.K. and Australian models .....AC 220 - 240 V, 60 Hz
U.S. and Canadian models .....AC 120 V, 60 Hz
Other models .....AC 110 - 127V/220 - 240 V (switchable), 50/60 Hz
Power consumption
U.S. and Canadian models .....12 W
U.K., Australian and other models .....14 W
Operating temperature ..... +5°C - +35°C (+41°F - +95°F)
Weight ..... 3.8 kg (8 lb, 6 oz)
External dimensions
PD-M601/PD-551 .....420 (W) X 291(D) X 105 (H) mm 16-9/16 (W) X11-7/16 (D) X 4-1/8 (H) in
PD-M501 .....420 (W) X 291(D) X 100 (H) mm 16-9/16 (W) X 11-7/16 (D) X 3-15/16 (H) in

2. Audio section

Frequency response ..... 2 Hz - 20 kHz
S/N ratio ..... 102 dB or more (EIAJ)
Dynamic range ..... 96 dB or more (EIAJ)
Harmonic distortion ..... 0.003% or less (EIAJ)
Output voltage 2.0V
Wow and flutter ..... Limit of mesurement (±0.001% W.PEAK) or less (EIAJ)
Channels ..... 2-channel (stereo)

3. Output terminal

Audio line output
Headphone jack with volume control (PD-M601/PD-M551 only)
Control input/output jacks (available with the PD-M551/PD-M501 and U.S. and Canadian models of the PD-M601)
CD-DECK SYNCHRO jack

4. Accessories

- Remote control unit (PD-M601/PD-M551 only) 1
- Size AAA/R03/dry batteries (PD-M601/PD-M551 only) 2
- Six-compact-disc magazine 1
- Control cord (provided with PD-M551/PD-M501 and U.S. and Canadian models of PD-M601 only) 1
- Output cord 1
- Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

The Magazine Type Multi-Play CD Players with mark and the Magazines with the same mark are compatible for 5-inch (12cm) discs.